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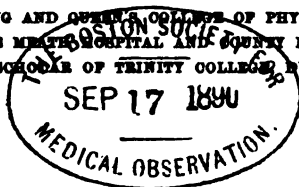


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THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

EDITED BY
JOHN WILLIAM MOORE, B.A., M.D., M.Ch., UNIV. DUBL.,

FELLOW OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND;
PHYSICIAN TO THE MENTAL HOSPITAL AND COUNTY DUBLIN INFIRMARY;
EX-SCHOLAR OF TRINITY COLLEGE DUBLIN.



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Authors of "Original Communications" will please consider themselves bound in honour to a strict observance of this understanding.

Authors of Communications are requested to write the prescriptions in their paper in full, and in English.

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THE DUBLIN JOURNAL



MEDICAL SCIENCE.

JANUARY 1, 1890.

PART I.
ORIGINAL COMMUNICATIONS.

ART. I.—*Notes and Remarks on a Case of Complete Prolapse of the Cervical Zone of the Uterus, preceding Labour at Full Term.** By FRED. WM. KIDD, M.D., &c.; Ex-Assistant Master, Coombe Lying-in Hospital.

ON the 22nd of October, 1889, having been sent for to see the married daughter of one of my nurses, I found her in the condition which I shall presently describe, and elicited the following history:—Patient between thirty-one and thirty-two years of age; has been married for nine years; had three living children—the last born on the 30th of May, 1885. Has had five miscarriages; two of these occurred after the birth of the first child at the third and fourth months of pregnancy—the first caused (according to her explanation) by pushing away her husband, who was drunk; and the second caused by moving heavy furniture. The last three miscarriages occurred since the birth of the last child—all of them about the third month. She supposes they were caused by the worry of a drunken husband—no other cause assigned; no reason to suspect any specific history. She never had any prolapse of the uterus, nor had she ever to seek for treatment for any uterine disorder; never had piles. Perinæum had been torn somewhat in first labour. Last menstruation ceased on the 17th of January of the present year (1889), when she became again pregnant. She was

* Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, November 22, 1889. [The discussion on this communication will appear in the February number of the Journal.]

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well and in good health until the 19th of October, on which day, about half-past ten o'clock in the morning, as she herself described it, she "got pains like first labour pains, and a lump came down in her passage." Pains lasted off and on for about an hour, when the tumour receded a little. Intermittent pains recommenced at 3 o'clock, and lasted two hours, felt low down in the back and above the pubes. Again at 7 o'clock the pains came on and the tumour descended lower than it had previously done; she thought it about the size of a turkey egg. All this time she had been about her household duties, thinking, as she had come to her full time, that labour was coming on, and that the more she moved about the better for herself.

On the morning of the 20th pains recommenced, and simultaneously the tumour descended. These pains lasted only about an hour; when they ceased the tumour receded. On the morning of the 21st slight pains occurred, but the tumour did not come down until the evening, when it descended without any accompanying pains.

On the morning of the 22nd, when she got up at 6 30 a.m., the tumour descended, unaccompanied by pain. At 10 o'clock, however, the pains commenced—slight at first, but gradually increasing in intensity until 11 o'clock, when she said they were like "strong bearing-down pains," and were accompanied by some vomiting. She sent for the midwife, but before she arrived she states that the tumour had descended "half way to her knees," and she thought "it was the baby come into the world." All this time she was either walking about or sitting down. When the nurse arrived there had come away some sanious discharge like "the show." The nurse—herself a woman of considerable experience—thought at first that the tumour was the foetal head with the membranes unruptured, but thought the membranes more red or raw-looking than any she had ever seen before. She put the patient to bed at once and sent for me without making any examination.

On my arrival both patient and nurse told me that the tumour had gone back very much since the patient had been put to bed. I found the following condition on examination:—A red, and in some places semi-purple, mass protruded for about 3 inches from the vulva. The diameter of this mass was from $3\frac{1}{2}$ to 4 inches; it was composed of the greatly-congested and turgid cervical zone of the uterus, dragging down with it the vaginal walls. The os

was in the centre of this mass and patent, so that I could easily introduce two fingers, but nothing could be felt except a soft membranous structure, which receded before my fingers as high up as I could reach. This canal seemed somewhat funnel-shaped, with the narrow apex below; os internum was dilated. There was some slight bleeding going on, but the origin of this could not be clearly ascertained. The so-called lips of the os were quite congested, and seemed each to be about $1\frac{1}{2}$ inches thick, while the blood-vessels at the upper portion of the mass were very full and turgid. Taking into consideration the recent history of this pro-cidentia, I determined to replace it if possible. Before I attempted this, the patient had several pains, which seemed to be voluntary expulsive pains provoked by the prolapse, but they were not to be compared, she said, to the violent pains she had had before lying down; and during these pains, although the abdominal muscles contracted, and the uterus *seemed* to contract externally, there was no increase of tension of the membranes felt through the cervix, as would be if it were a true uterine contraction.

Grasping the cervical portion with my fingers, very much in the same manner as a paraphimosis is reduced, I used some compression, and then slowly forced the prolapsed portion upwards, until it was in the normal position. Before removing my hand, another endeavour was made to feel the presenting part, when the child's hand could just be touched. The membranes could not be found attached to the wall of the uterus as high up as the fingers could reach, although almost the whole hand was in the vagina. When the hand was removed there was no tendency for the prolapsed portion to descend again; all uneasiness and pain ceased, so the thighs were elevated by a pillow placed beneath them, and she was left quiet. By external palpation the child's head was found inclined to the left iliac fossa, and no portion had descended into the true pelvis, except, perhaps, this hand that could just be touched. Foetal heart was heard to the right side of umbilicus.

I left her about 6 p.m., and returned at 8 p.m., and brought Dr. Fleming with me; he kindly volunteered to give me his assistance in case pains had come on and that the case had become one of true transverse presentation requiring version. There had been no further descent of the cervix, and the congestion had already begun to subside. Fearing lest labour should supervene while the cervix was still much congested, it was decided to attempt external version, so as to make the breech the presenting part, and

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so more gradually dilate the congested cervix with the smaller wedge—viz., the breech. This attempt was carried out with very little difficulty, except that we had to resort to combined internal and external version. Patient was left, feeling very comfortable; no bleeding whatever; no pain.

Next day, 23rd, patient felt easy; had slept well; no difficulty in micturition, but had slight sensation of bearing-down on defæcation; no rise of temperature; pulse 88.

25th.—Had no pains since; no discharge; no return of prolapse; congestion of cervical portion entirely disappeared; os only about size of a shilling. Finding the congestion all gone, in the interests of the child I performed external version, and again brought the head down, so that it was just above the true pelvis.

On the 27th true labour pains commenced about 6 p.m., and she was delivered of a fine, strong male child at 9 30 p.m., after a very short and perfectly normal labour; at no time during the labour did any prolapse of the cervical zone occur.

Convalescence proceeded uninterruptedly, and patient was up on the 9th of November. A vulcanite ring has been put in position, and an astringent injection used since, as there has been some slight bearing down sensation. A probable explanation as to the cause in this case may be found in the fact that the patient was in the habit of carrying large pails of water, and had scrubbed out her room on the day previous to that on which she first felt the prolapse. On the other hand, she had never had any trouble from prolapse or bearing-down previously, although her perinæum had been somewhat torn in her first labour.

Before making any general remarks, I shall read the short notes of a case of prolapse of the cervix which I attended about six years ago. I was sent for to attend a soldier's wife in one of the barracks in Dublin. She had refused to go to the hospital provided for soldiers' wives when in that condition, and thereby, I believe, had forfeited her claim to be attended by the medical officer in charge. She had an army midwife with her. The surgeon had seen her the preceding evening, and said she was not in labour at all, prescribing opium. When I arrived, at eleven o'clock in the morning, I found the patient a pale, fragile, deformed creature, aged thirty-four, primipara; right knee ankylosed, and leg at right angles to thigh; hip-joints also affected by rheumatism; no deformity of the pelvis, except that it was rather small; had not been aware of any procidentia before labour came on. Pains were almost

incessant, and she was forcing down as hard as she could, helping herself by pulling on a sheet tied to the top of the bed. She says she had similar pains since the preceding day, slightly relieved by the opium; liquor amnii had drained away twelve hours previously. On examination the head was found low down, distending the perinæum well with each pain, but bringing with it the cervical zone of the uterus. This was dilated to about the size of a crown, and protruded from the vulva for about one inch or more. It seemed almost cartilaginous as to hardness, and about a quarter of an inch thick, fitting closely to the head; the scalp protruding about one inch in the form of a caput succedaneum. A futile endeavour was made to push the head back a little—in the short interval between the pains. Fearing that there was danger of the uterus rupturing, so strong were the pains and so unyielding the cervix, and assisted by the surgeon, who was surprised to find the turn things had taken—he having pronounced her not in labour—chloroform was administered. The attempt was then made to dilate the cervix with the fingers. This proving ineffectual, it was determined to incise the cervix and apply the forceps. Four incisions—two anterior and two posterior—were made with a blunt-pointed bistoury, to the extent of about an inch from the margin; short forceps applied without difficulty, and she was delivered of a living female child comparatively easily. Convalescence was quite satisfactory. There was really no hæmorrhage from the incisions, and when I examined her two months later there was no eversion of the mucous membrane of the cervical canal, nor anything to betoken what had been done, except a slight linear depression where each incision had been made. She did not suffer from any prolapse or enlargement of the cervix.

This seemed to me at the time to be a case of extremely rigid os, and that severe expulsive pains, assisted by voluntary muscular effort (from pulling on the sheet fastened to the head of the bed), had driven down the head with the rigid os closely surrounding this caput succedaneum. On reading more of the literature of the subject, however, it is just possible it *might have been* a case of hypertrophy and elongation of the cervix, *if we can believe*, firstly, that it could have existed to some considerable extent without her knowledge; secondly, that in two months after labour there was not a trace of hypertrophy of the cervix.

On comparing the history of these two cases it is at once evident that they are quite different and distinct from each other, both as regards causation and treatment. They may be regarded each as a

type of a distinct class. There are yet two other forms of prolapse of the cervical zone of the uterus complicating pregnancy—viz., that in which the cervical portion of the womb prolapses early in pregnancy, and remains elongated, hypertrophied, and prolapsed more or less until abortion or labour at full term has concluded the case; and lastly, that in which impregnation has been known to take place in a uterus completely prolapsed, and go on to labour at full term.

My reason for bringing forward these cases, and troubling you with their details, is that in all the literature on the subject that I have had access to, I have not met records of any two exactly similar cases. They are not everyday occurrences, and yet any one of us *might* meet with a similar case. In obstetrics the practitioner is more frequently confronted with unexpected complications than in any other branch of the profession. These he must be ready to deal with at a moment's notice. He should have his knowledge at the tips of his fingers, otherwise he may jeopardise the lives of both mother and child; he should know "what to do, how to do, and when to do." In most other branches the practitioner, if in doubt, can either read up authorities on the question, or call in consultation some skilled opinion, whereas in obstetrics he is often thrown completely on his own resources, by which he must either stand or fall.

Prolapse of the cervix in the pregnant uterus may take place, as I have said, early or late in pregnancy, but the predisposing causes are almost always some or all of the following—viz., weak ligaments, unusually large and wide pelvis, rupture of the perinæum in previous labour, and relaxed vaginal walls, with rectocele, cystocele, or both combined; while the determining cause is usually lifting some weight, jumping or falling on the feet from a height, or severe muscular exertion—such as washing over a tub.

In looking over the literature of this subject we meet with some very strange cases, a short account of some of which may not only be interesting, but also instructive.

In the *Dublin Quarterly Journal of Medical Science*, 1853, there is a paper on "Prolapsus of the Uterus and Vagina during Pregnancy and Labour," by Mr. J. H. Houghton, of Dudley, in which he gives the following details of a case:—Mrs. S., aged twenty-six; second pregnancy. Labour commenced Nov. 13th at 4 p.m.; pains feeble until 2 p.m. following day; as then the size of half-a-crown; membranes ruptured twenty-four hours previously;

head presented; os uteri close to outlet. The walls of the uterus from margin of os to where the head of the child pressed, formed a cone three inches long, apex downwards, as though the neck of the womb had dilated simultaneously with, instead of becoming obliterated before, the dilatation of the os. The lips of the os were thick, rigid, and unyielding; pains regular and strong. Gradually head and uterus came down together, dragging with it the anterior wall of the vagina, and obliterating the anterior *cul-de-sac*. Finally the whole of the os, with a large caput succedaneum, protruded from the vagina; this went on until 8 p.m. Tartar emetic was given, and nausea kept up for three hours; then two scruples of laudanum. Os was now larger than a crown piece; pains moderated by laudanum, but returned sharply about 10 p.m. Fearing entire protrusion of head and uterus, Mr. Houghton replaced uterus as well as he could between the pains, and when the pain was coming on he passed the fingers of the right hand into the anterior *cul-de-sac* of the vagina, and the thumb of the same hand into the posterior *cul-de-sac*, fingers and thumb, thus embracing the os uteri and child's head, allowing the latter to press upon and dilate the os, at the same time preventing the descent of the uterus *en masse*. At 11 30 p.m., during a strong pain, something suddenly gave way, and the child was born alive. Cervix was lacerated; uterus frequently descended during the protracted puerperium. Patient told him she had been neglected in her first confinement; had prolapsus ever since. Uterus had come down every day during her pregnancy, even to the day of her delivery. This case, on the whole, reads like one of elongated cervix, which could only have been returned into the vagina when "it had dilated sufficiently to allow of the descending head to obliterate its canal."

Dr. Merriman, in the *Medical Times*, gives six cases he has collected:—

1st. From the practice of Professor Rizzoli. Account so meagre as to render it almost useless.

2nd, in 1776, from Memoirs of the Medical Society of London.—The protruded mass was wedged in the passage, when mortification appeared imminent. The perinæum was found dilatable; it was dilated, and the mass slipped back. Child subsequently born naturally.

3rd, in 1763, in the practice of Mr. Antrobus, of Liverpool.—"She went to her full time, though the cervix became scirrhus from

exposure. First pains drew up uterus, but liquor amnii escaping it was again propelled down before the head. Counter-pressure was made, and the part lubricated; child was born and the uterus replaced."

4th, Mauriceau.—"The uterus had protruded during labour, to the extent of half a foot, and was as big again as the head of a child. The os looked like a phimosis, of which the lips were three fingers' breadth, thick, and quite livid. He introduced his hand by degrees into the uterus, and thus guided the head to its exit." This seems to correspond somewhat in description to my first case, but the treatment was different.

5th, Portal.—Primipara; protrusion when os was only half a line apart. First introduced a sound, then a finger; gradually both hands were insinuated. The bag of waters assisted, and two pains delivered her; uterus was replaced. She had relaxation previous to marriage, which she could easily replace.

6th, Smithe.—The os was pushed beyond the os externum by the pains. "During every pain I kept up child's head and the mouth of the womb, which I gradually dilated with my finger, till being fully opened it slipped up all round the head, and this by degrees gradually opening the os externum, delivery was effected."

7th, Gristock.—Third child; had suffered from procidentia since birth of last child. The protrusion became greater in third pregnancy, but as it advanced it gradually passed up. When pains came on, a large fleshy mass passed through vulva. He found os uteri and a considerable part of vagina protruded; had her fomented, and waited; when pains became strong the hand was expanded over the protruded part so as to make the ends of the five fingers afford five points of support to the prolapsed vagina; at last, during a strong pain, the mass slipped into the pelvic cavity and a child was speedily born.

Dr. David Davies, in his "Principles and Practice of Obstetric Medicine," mentions the following:—

1st. Woman, aged thirty-two, fourth pregnancy, attacked with pains like labour pains; three days elapsed and no delivery took place. Suddenly, after a prodigious expulsive effort the whole gravid uterus and its contents protruded through the vulva; the uterus was in a state of inflammation; os scarcely patulous enough to admit the introduction of a finger. Woman died four hours after; skin was peeling off child.

2nd. Middle-aged woman, ten weeks pregnant; the uterus

was pushed entirely out of vagina; it was returned and kept up by pessary until labour came on, when she was delivered of a small child.

3rd. From Haller's "Chirurgical Disputations."—Woman, aged thirty, had procidentia for two months; woman was delivered first, uterus then replaced and retained by pessary." It does not state in this Report how far advanced in pregnancy the woman was.

4th. Uterus prolapsed outside vulva; irreducible, was fomented; pains supervened; membranes entire; hand was introduced; version accomplished and mother and child saved. Uterus was reduced afterwards and woman recovered perfectly.

5th. Woman had prolapsus during gestation, and experienced a repetition of it during labour owing to bearing-down too severely; protruded portion was about the size of a man's head; delivery effected by section of the os and part of the neck of the uterus; uterus subsequently reduced and retained in position by a pessary.

6th. Reported by Hanerwolf.—"The orifice of the uterus being partially dilated, the patient herself dilated it still more, the midwife assisting; birth was effected in this state of the womb; uterus, after being fomented, was returned and retained without a pessary."

Ashwell mentions two cases. One, an out-patient at Guy's, who told him that during the whole time of her last pregnancy the womb was external and the child was born whilst the womb was outside the vulva. The woman afterwards suffered from irreducible prolapse.

The second case is from Capuron's "Maladies des Femmes," and is one of the most extraordinary on record. A peasant girl, aged fourteen, made a violent effort during menstruation, which protruded the uterus externally; it was not reduced at all. She married at twenty-two; she enjoyed good health until she was forty, but was childless. However, one day her husband "dilated the uterine orifice, introduced the glans penis therein, and conception was the result." When labour came on the pains could not expel foetus, owing to the cartilaginous hardness of the neck, mouth, and sides of the womb; a double incision was made, and labour terminated favourably. A full-grown dead infant was born.

Barnes, in the chapter on Prolapsus of Gravid Uterus in his "Lectures on Obstetric Operations," mentions a case, cited by Moreau, from Chopart—viz., "a young woman had procidentia uteri,

the result of violence before marriage. This was never reduced, but after twenty years—the cervix becoming gradually opened—conception took place. Labour, at term, went on for twenty-four hours without progress, when the child was dead and the woman seemed expiring. The surgeon, Marrigue, divided the cervix by incision, and thus was able to extract the child; the mother recovered. It is not clearly stated that the entire uterus and child were external to the vulva at the time of labour.

There is a suspicious similarity between this case and the foregoing one, in many essential points, so as almost to make one think that they are merely slightly different versions of the same case.

There is a record of a case reported in the *Half-yearly Abstract of Medical Science*, 1869, by Mr. William Allison, which it seems very hard to credit. It is as follows:—“On 23rd March, in attending on a woman I found the uterus containing a child, in the bed, just as if the child had been born. After sponging off any trifles of lint, &c., from the uterus, the entire mass was carefully returned into the abdomen. On 24th March a pessary was introduced, but was intolerable, so woman was desired to lie or sit still until labour came on, which it did on May 2nd; child was born alive.”

In the *British Medical Journal* of July 7th, 1888, Mr. H. T. Barton, of Burnley, has reported a case which unfortunately ended fatally. Woman, aged thirty-eight 3rd pregnancy; had miscarried at four and five months previously; had prolapse from girlhood. When labour came on cervix uteri completely blocked vulvar opening, and projected externally for two inches as a mass, three inches in diameter, tense and œdematous; head was felt three inches from external os. Nothing seems to have been done for her for two days except give 1 grain of opium and foment; then 20 gr. doses of chloral were given every ten minutes, and after half an hour a seven months' foetus was born. Patient died the next day from collapse and exhaustion.

This case, I think, teaches us that active measures are necessary if we hope to bring them to a successful termination. Might not an attempt to return the prolapse on the first day of labour, with or without incising the os, have saved this patient's life?

In the *British Medical Journal* of March 11th, 1882, Mr. Percy Boulton, Physician to the out-patients at Queen Charlotte's Hospital, reports a case very similar to that I have previously quoted from Capuron. When the woman was last pregnant the uterus came down between the third and fourth month, and could not be

returned. The fœtus was carried to full term in the prolapsed uterus, "which reached down to the hamstrings, and was not unlike a cow's udder." Dr. Lowe, of Lynn, attended this patient, and saw both fœtus and placenta pass straight from the uterus, without, of course, traversing the pelvis. Labour was short, easy, and quick. Dr. Boulton suggests the possibility of producing artificial prolapse in certain cases as an alternative for craniotomy, and the opportunity afforded of making accurate and interesting observations with regard to uterine contraction during labour.

In the *British Medical Journal* of April 29th, 1882, Dr. J. Hickinbotham has reported the following case:—November 12th—Called to see a primipara expecting labour; found a large mass protruding from the vulva, consisting of greatly hypertrophied cervix (she also had the rare complication of a urethral cyst in front of the prolapsed cervix); os uteri admitted finger. 21st—Labour began. Although she had pains, there was no progress made; head lying at brim; os looked annular and gristly. Near the vulva cervix was encircled by large veins. Trying to dilate cervix there was much hæmorrhage, so cephalotripsy was performed. Prolapse had occurred so gradually as to push aside hymen without rupturing it, and without inconvenience, so that not until marriage did she know that anything was wrong. The cause of the procidentia, he says, was "no doubt lifting and carrying heavy weights while still young." Six weeks after confinement uterus prolapsed, but both cervix and os were normal in appearance.

At the Aberdeen and Banff Branch of the British Medical Association the following case was reported by Dr. Shearer, of Ballater:—Labour had scarcely begun when the case was first seen. A fleshy mass the size of a large turnip, consisting of the neck and part of the body of the gravid uterus, was found protruding beyond the vulva. Entire vagina was forced outside; os the size of a sixpence, was beginning to dilate; delivery natural. She was a multipara. The uterus had come down after the birth of the first child, and had been getting worse after each child since; it remained beyond the vulva, even when unimpregnated. It is an interesting query how pregnancy took place in this case when the womb protruded so far as to cause difficulty in walking.

Barnes, at the Obstetrical Society of London, December 6th, 1876, exhibited the uterus of a woman who had died after premature labour. The os externum had protruded beyond the vulva, with

complete eversion of the vagina. Patient died of pyæmia, possibly connected with injuries sustained during labour by abnormal state of the canal the child had to pass through.

In the *Obstetrical Transactions* of 1874, Dr. George Roper has recorded a typical case of hypertrophic elongation of the cervix uteri at full term of pregnancy. E. C., primipara, aged twenty-two; cervix uteri protruded three inches; canal admitted forefinger; when cervix was reduced within vagina foetal head could be felt. Os externum was freely incised in seven places; it cut with a gristly sensation; forceps were applied, and living child delivered. Two months later the hypertrophied portion of cervix hung down in the vagina, like a shrivelled piece of skin; it was removed lest it should again become developed by any succeeding pregnancy. In another case he was called in when the patient was in a serious state of exhaustion. He had to deliver at once by cephalotripsy, as symptoms were so urgent and there was not sufficient dilatation for the forceps. Patient died ten or twelve days later from pyæmic pleuro-pneumonia, caused doubtless by the local bruising and long-continued pressure.

Kleinschmidt, in the *American Journal of Obstetrics*, 1885, reports a case where the patient had had rupture of the perinæum, and the uterus came down when about seven weeks pregnant for the second time; it projected an inch, but receded in the recumbent position. After the middle of the sixth month it did not recede. Some sanious discharge occurred at intervals all through pregnancy. At full term a protrusion, which was all cervix, filled the vulva, extending beyond for two or three inches. Pains like labour pains succeeded, but there was no true contraction of the uterus. Patient assumed the knee-chest position, when the uterus, with a perceptible jerk, was replaced by its own weight in the abdominal cavity. On resuming recumbent position descent again occurred. Gave an opiate, and ordered quiet. Four days later true labour pains came on; os internum was beyond vulva, while the uterine segment enclosing the head distended the perinæum; os externum was open $1\frac{1}{2}$ inches; finally, head was pushed up and the canal opened until the head was within $\frac{1}{2}$ inch of the os externum; but the os would not dilate any more, nor would the $\frac{1}{2}$ inch canal shorten. Short forceps were applied. The neck of the uterus now grasped the instruments 2 inches above the handle, $\frac{3}{4}$ inch from the angle of the blades. Assistant tried to keep back uterus, which descended with the traction, instead of dilating. The noise

of tearing fibre making him desist, he incised the os anteriorly and posteriorly as far as the union between the uterus and vagina. Labour was then successfully completed, and the incised cervix was sutured.

In November, 1877. Professor Simpson read a case before the Obstetrical Society of Edinburgh for Dr. Hamilton, of Hawick. Patient, twenty-four years of age, had had an abscess in the labium recently; was four months pregnant; lifting a bucket of water, complete prolapse of the uterus took place; on the 5th day labour pains set in; the uterus could not be returned, and delivery was effected by pulling down a foot.

The lesson to be learned from the history of so many cases is, that we must understand there is no hard and fast rule to be laid down as regards treatment. The treatment must often be varied according to the exigencies of the case. In broad terms, however, the treatment should be—in every case endeavour to return the prolapsed portion. If that be not feasible, dilate the canal by hydrostatic dilators, manual dilatation, or by incision, and deliver by forceps or cephalotripsy, supporting the perinæum and vulva well, lest lower segment be drawn through. In complete procidentia, if you cannot return it, labour must take place outside the pelvis. If the uterus does not empty itself, you may have to resort to the forceps or turning. You can in this case support the prolapsed portion by a sheet with a hole cut out of it large enough to let child pass through. With regard to the class where the cervix is hypertrophied and elongated, Galabin, in a paper on Prolapsed Uterus, says:—"In cases of hypertrophied cervix during an expulsive effort the swollen and hypertrophied cervix is forced suddenly through the vulva, and while it is held strangulated in that position for a greater or a less time, the elastic supports of the uterus, tending to lift it again to its normal position, have a direct influence in stretching the supra-vaginal portion." Some obstetricians have advocated the amputation of this elongated cervix when it is likely to interfere with parturition, but there is one great danger which is clearly portrayed by Barnes in the chapter on Prolapsus of Gravid Uterus in his "Lectures on Obstetric Operations"—namely, that of opening into the retro-uterine peritoneal pouch, which is dragged low down by the inversion of the vagina; also in front the peritoneum descends behind the bladder to the same level as the lower margin of the symphysis pubis.

Lusk and Kleinwächter state that it is not possible for the preg-

nancy to be completed when it occurs in a case of complete pro-
lapse or procidentia, because of the injuries to which the organ is
exposed. Nevertheless, Stoltz states that very numerous facts
prove that the pregnancy *may* arrive at term.

In conclusion, I may express the hope that some of the cases
I have cited may furnish some questions of interest to my readers,
and perhaps be fortunate enough to elicit some personal experi-
ences from members of the Section of Obstetrics in the Royal
Academy of Medicine in Ireland, who have had a far more
extended field of observation than I have had.

ART II.—*The Houses of the Working Classes, with more especial
Reference to Ireland.* By THOMAS WRIGLEY GRIMSHAW, M.A.,
M.D.; Registrar-General for Ireland.

THE renewed interest which seems to have been directed to the
subject of the dwellings of the artisan and labouring classes has
induced me to again call attention to this important subject, and
to bring under the notice of the readers of *The Dublin Journal of
Medical Science* some observations which I put together, mainly
for the purposes of a lecture at a literary and scientific institution.
I wish specially to direct attention to the important work performed
by the Royal Commission on the Housing of the Working Classes
of 1884,* whose Report does not appear to have borne anything
like the good fruit which was expected of it.

We are, in fact, again going over the old ground, many writing
and speaking as if nothing had been done. Under these circum-
stances I think a general review of the question will not be unin-
teresting, though I cannot profess to have anything new to write
upon the subject of the housing of the working classes.

Some years ago there appeared a little pamphlet entitled "The
Bitter Cry of Outcast London," and about the same time an illus-
trated pamphlet entitled "How the Poor Live." Many discussions
arose in connection with these publications, and attention was
directed to the social condition of the lower stratum of society in
a manner which seemed to stir up the public conscience, as if such
things had never been heard of before. It seemed that the art of
Hogarth and the startling tales of woe of Disraeli, Thackeray, and
Dickens, not to mention other artists and authors, of "facts stranger

* First, Second, and Third Reports of the Royal Commission on the Housing of the
Working Classes, in the Minutes of Evidence, &c. London. 1885.

than fiction," though only facts veiled in fiction, had been forgotten. When these sensational tracts appeared before the public, many of our older philanthropists were astonished at the avidity with which these tales were received by the public as new disclosures of the miseries of their fellow-creatures. Indeed if jealousy could dwell in the hearts of such workers of good, they might well have been jealous to find that their lifelong labours had attracted much less notice than these ephemeral outbursts of burning zeal. We have, however, profited much in the way of public inquiry in consequence of this outburst of enthusiasm; we have obtained volumes of valuable information, and thereby provided material for practical work in future. I shall not venture to deal with the history of this question, which has much longer occupied the attention of philanthropists than the public generally believe. The points which I deem most suitable for consideration are—our position at present and in the immediate past, and our future prospects.

The condition under which the working classes live in the United Kingdom (which is almost the same as it was at the time of the Report of the Royal Commission of 1884) is deplorable. We find in many cases *all* the conditions of comfort, health, and decency disregarded; in the vast majority of cases they are grossly neglected, and in comparatively few cases are they moderately complied with, and it is only in exceptional cases that they are adequately fulfilled. An idea of the present condition of the dwellings of the working classes can be fairly acquired by the study of the Report of the Royal Commission on the "Housing of the Working Classes." I am fully aware that there is a great deal which we might expect to find in the evidence and reports of that Commission which is not to be found therein, but it should be remembered that Select Committees of the House of Commons had taken evidence upon the same question in 1881 and 1882, and that the evidence given before these Committees was considered by the Royal Commission. We must also remember that the Commission desired to bring its work to a close in order that legislation might take place with as little delay as possible.

The Report of the Commissioners is divided into three parts, corresponding with each division of the United Kingdom. This division originated in the necessity of turning out their work as quickly as possible, but it possesses a great advantage which does not appear to have been anticipated—namely, that, as the inquiry proved, the conditions of each division of the United Kingdom

differ so materially that they could scarcely have been dealt with collectively. The Commission declare that they "had testimony to prove two important facts:—First, that though there was a great improvement, described by Lord Shaftesbury as 'enormous,' in the condition of the houses of the poor compared with that of 30 years ago, yet the evils of overcrowding, especially in London, were still a public scandal, and were becoming in certain localities more serious than they ever were. Second, that there was much legislation designed to meet these evils, yet that the existing laws were not put into force, some of them having remained a dead letter from the date when they first found place in the statute book.

"Lord Shaftesbury expressed the opinion more than once, as the result of nearly 60 years' experience, that however great the improvement of the poor in London has been in other respects, 'the overcrowding has become more serious than ever it was.' This opinion was corroborated by witnesses who spoke from their own knowledge of its increase in various parts of the town. The facts which were described to your Majesty's Commissioners as regards much of the central portion of London, which was especially investigated, bore out the statement of a witness who said of the part of St. Pancras lying south of the Euston-road that overcrowding had not increased there simply because the district had become so full it could not grow more crowded. The facts mentioned in evidence show plainly how widely the single-room system for families is established; and the statement of a clergyman from the centre of London, that in his district the average is five families to six rooms, will be found, in certain areas, to be under the mark rather than an exaggeration."

The Commissioners then proceed to give specific examples:—

"In Clerkenwell, at 15 St. Helen's-place, a house was described containing 6 rooms, which were occupied at that time by 6 families, and as many as 8 persons inhabited 1 room. At 1 Wilmington-place there were 11 families in 11 rooms, 7 persons occupying 1 room. At 30 Noble-street 5 families, of 26 persons in all, were found inhabiting 6 rooms. A small house in Allen-street was occupied by 38 persons, 7 of whom lived in 1 room. In Northampton-court there were 12 persons in a 2-roomed house, 8 of whom inhabited 1 room. In Northampton-street there was a case of 9 persons in 1 room. At 5 Bolton-court a family of 10 persons occupied 2 small rooms. At 36 Bowling Green-lane there were 6 persons in an underground kitchen. At 7 New-court there were

11 persons in 2 rooms, in which fowls also were kept. In Swan-alley, in an old, partly wooden, and decayed house, there were 17 persons inhabiting 3 rooms. In Tilney-court, St. Luke's, 9 members of a family, 5 of them being grown up, inhabited 1 room, 10 ft. by 8 ft. In Lion-row there was a room 12 ft. by 6 ft., and only 7 ft. high, in which 7 persons slept. In Summer's-court, Holborn, there were 2 families in a room 12 ft. by 8 ft. At 9 Portpool-lane there were 6 persons in 1 small back room. At 1 Half Moon-court, in a 3-roomed house, were found 19 persons, 8 adults and 11 children; and the witness, who has had much experience in the neighbourhood, said he could hardly call that house overcrowded, as he knew of a case of 12 persons in 1 room in Robin-Hood-yard, Holborn. In St. Pancras, at 10 Prospect-terrace, 8 persons inhabited 1 room, 10 ft. by 7 ft., and 8 ft. high. At 79 Cromer-street there was an underground back kitchen, 12 ft. by 9 ft., and 8 ft. high, inhabited by 7 persons. At 3 Deery-street the first-floor front room was 13 ft. by 12 ft., and 9 ft. high, and was inhabited by a family of 9, who had only one bed. At 22 Wood-street, on the top floor, there was a room 11 ft. by 9 ft., and 8 ft. high, inhabited by a family of 8 persons."

"Evidence of the same kind was forthcoming from other parts of London. At 6 King's Arms-place, Bermondsey, there were inhabiting the wash-house at the back, 10 ft. by 5 ft., a father and mother, 2 children, and 2 older sons. At 34 Salisbury-street a husband, wife, and 5 children were inhabiting 1 room. At 3 Metcalfe-court 3 rooms were occupied respectively by 4 adult persons, 5 persons, and 7 persons. In System-place 1 room was occupied by a man and wife, with four children, the eldest of sixteen, in addition to a woman-lodger and baby, eight in all, in a room 9 ft. square. At 2 Neckinger-place 1 room, about 10 ft. square, was occupied by a family of 8; and at 23 Druid-street there was a room occupied by a man and wife and family of 4, the eldest being seventeen years old. In Spitalfields, 35 Hanbury-street, is a house of 9 rooms, and there was an average of 7 persons in each room. In no room was there more than 1 bed. At Notting-hill were found, in St. Catherine's-road, cases of 6 and 7 members of a family occupying 1 room."

"There is much room for improvement in the matter of ashpits and dust-bins. In Half Moon-court there was a case given in evidence of five houses having only one between them. Vegetable substance, the refuse of costermongers, is frequently thrown into

open dustholes, and was described by a witness as lying for weeks decomposing and poisoning the atmosphere of the close courts. In Liverpool it was stated that in houses in which all the rooms were not occupied, cellars, and even parlours, are frequently used as receptacles for decaying refuse, and where the dust-bins were outside the house they were placed just under the windows. A member of a building firm, who has had large experience in the erection of dwellings for the working classes, said that he had no doubt that the neglect of dust-bins was the means of communicating scarlet fever to whole rows of houses."

"The water-supply of London and the great towns is better than it was, but its inadequacy is still the cause of much unhealthiness and misery. The single water-supply for an entire tenement house, often many stories high, has already been mentioned. The supply, it has been stated by witnesses, is in some parts of London very uncertain, and when it is drawn it is kept by the poor in tubs, sometimes in sleeping-rooms, there being no storage accommodation in most of the small dwellings. Even where there is a supply in the houses a large number of them are supplied from one and the same cistern for the purpose of flushing the closet and for drinking. The cistern is sometimes uncovered, and is often close to the closet-pan and to the dust heap."

"It has been shown how many of the dwellings of the poor were originally built for different purposes from those to which they are now put. The middle-class house, intended for the use of one family, has usually gone through vicissitudes not calculated to improve the structure before it reaches the condition of a low-class tenement house. When the causes of the present condition of the homes of the working classes are examined, it will be seen how the property on many estates has passed for long periods out of the effective control of its nominal owners, with the consequence of utter disregard for the condition in which it is kept."

"The City Baths is a large block of buildings in St. Luke's, containing nearly 100 sets of rooms, one half of which are built round what would be a quadrangle or courtyard if it were large enough; but it being, on the contrary, very small in comparison with the height of the structure, the rooms built round it look out upon what is practically only a narrow shaft, and consequently nearly dark. In Bermondsey houses were said to be rotten from age. In Southwark houses were falling down from decay, and some of them had large cracks and holes in the walls large enough for a man to enter.

"In York-place, Clerkenwell, the walls were described as so damp that the paper was hanging in shreds. The sink which should carry off all the wet was upon the highest part of the ground, so that the water lay about in pools. There were no back yards and no back ventilation. These last-named defects are among the most mischievous evils attaching to poor dwellings in populous neighbourhoods. 'A very large number of them have no back yards,' is the description given after a house-to-house visitation in Clerkenwell this year, and the houses in this condition would seem to be without wash-houses too. In the neighbourhood of Tottenham Court-road the back rooms of certain houses are described as being dark, because, where the yard should be, what is termed a cottage, three stories high, was built within two yards of the back windows of the front house. Instances might be multiplied from other parts of London."

With reference to provincial towns the Commissioners remark:—

"At Bristol houses stand back to back, with air and light blocked out. At Newcastle there are very tall houses in the old part of the city, built back to back, or with no proper yards, and at Doncaster there are a large number without any back ventilation. Even where the back to back system does not exist, houses are often constructed so that the inhabitants obtain as little light and ventilation as possible."

"In Liverpool, where extensive improvements have been effected, but where the death-rate is still unfortunately very high, houses were described to be in the last stage of dilapidation. The windows contained little glass, and even the sashes had disappeared. Few of the roofs were rain-tight, and walls were alive with vermin. In some cases the walls were crumbling away, exuding a green slime, and so rotten that a stick might be thrust through."

With reference to rural England, the Commissioners notice "instances of the defective housing of the rural working classes. Mr. Selby, an agent of the Agricultural Labourers' Union, and formerly a labourer himself, testified to the condition of certain parts of Wiltshire, to which he had paid special attention. In one village he described several cottages, in which the structural defects were considerable. The bedrooms in one case were not high enough to stand up in; and in another case two small bedrooms, each of which was entirely filled by the bed, were occupied by a man and his wife and 7 children, from sixteen years of age downwards. In another there was a case of a widow and her

family of 6, the eldest son being twenty-five, sleeping in one bedroom. At a third, a labourer and his daughter, with her husband and 6 children, all slept in one bedroom, not more than 14 feet square, the sloping roof at the highest point being about 7 feet from the ground, but in that case there appeared to be a downstairs room not used for sleeping purposes. In the rural districts there is less plea of absolute necessity for overcrowding in sleeping rooms than in the metropolis—that is to say, the single room system, as it is found in the metropolis, has no existence in agricultural villages. Single room cottages—those containing only one room for all purposes—are found in rare cases. As a rule, the most miserably housed families in the rural districts have another room in addition to the sleeping chamber, and it is from habit or from the nature of the room that they do not utilise the living apartment for the purposes of sleeping. Two-roomed houses in some localities in this and in other counties are very common, and it is in them that the worst overcrowding exists. The structural and sanitary condition of some of the cottages in Wiltshire are described to be very bad. At another village they were found to be falling to pieces from neglect; in some cases the bare thatch being visible upstairs and letting in the rain.”

The report on Scotland is of a less disagreeable character than that on England, especially as regards the large towns in that portion of the kingdom :—

“The general feeling expressed in the evidence as to the large towns [in Scotland] is that the condition of the housing of the working classes, though in many cases deplorable, is not of the extremely miserable character described as existing in London; that efforts have been made for its amelioration not without a marked effect; and that the causes of existing misery are to be ascribed as much to the habits of the people as to certain outside influences. The first witness examined in Scotland was the Chairman of the Board of Supervision, and he expressed, as the opinion of his board, that ‘we have no great anxiety about large towns.’ The question which produced this reply had special reference to the proportion of sanitary inspectors to population, but the answer was made in general terms, and the tone of the evidence of subsequent witnesses seemed to support it.”

“It is not in Edinburgh alone that are found these large tenement houses (the English expression is used for convenience), nor are they always ancient buildings. At Paisley they are said to be

on the increase, and it seems in Scotch towns to be as usual to run up an edifice of great height containing a number of separate dwellings, as it is in England to build a row of two-storied cottages. At Glasgow it is acknowledged that an extraordinary high proportion of its population live in single rooms, but it is said that the single rooms are much larger than elsewhere. The single-room system is an incident of the tenement system. Some confusion may arise from the use of the word 'house' in the Scottish sense, and it must be borne in mind that the references in evidence to the frequent existence of 'single-room houses' are not to hovels containing only one apartment, but to single rooms separately occupied in edifices of considerable size.

"In Edinburgh there are said to be 14,000 single-room tenements; in Glasgow 25 per cent. of the whole population live in single rooms; and in Dundee there are 8,221 houses of one room, containing 22,870 inhabitants. The chief reason for this seems to be that the occupants of the single-room tenements cannot afford to pay for more accommodation. The custom of the poorer classes in Scotch towns may have something to do with their mode of life, but it is probably for the most part a question of rent. It must be borne in mind that mill-girls in parties of two and three, widows, married couples with no children, and others who form a sensible proportion of those who live in single rooms may inhabit them without harm."

"Much evidence was given by witnesses from large towns to the effect that a considerable proportion of the labouring classes in Scotland would be able to house themselves in far greater comfort if it were not for the large sums they spend in drink. The evidence of Glasgow witnesses is virtually repeated in other words by many other witnesses who were questioned on the point. 'There are some of them in great distress, living on very little money, and there are others again that could afford perfectly well, if they chose to do it, to spend a larger proportion of their earnings on house accommodation, but they prefer to use it on whiskey or something else.' And again, Sir William Collins said, 'They spend far more on drink than they pay for the rent of their houses on an average.' Another witness, in explaining that the poor people made no outward demonstration of discontent with their surroundings, was of opinion that many of them might live in better houses if they kept more sober.

"The dilapidated condition of many of the habitations of the

poor is another great evil. In some of the old parts of Edinburgh there are houses which are too decayed to be repaired, and the same process has taken place with regard to the inhabitants of the most miserable quarters, which was noticed in the portion of the Report which referred to London. When clearances have been made accommodation has been supplied for the most respectable artisans, but the poorest section of the population have been left to inhabit the defective houses which remained."

With respect to the country parts of Scotland the Commissioners drew a marked distinction between the Lowlands and Highlands. This is especially interesting to those who view the Report from an Irish standpoint—as, while in the Lowlands we meet with conditions similar to those found in England, the Highlands, with their Celtic population, more nearly resemble those met with in the rural districts of Ireland.

"The state of things in the Lowlands is much more favourable than in the Highlands and Islands. In Forfarshire and the Eastern Lowlands all the houses that have been built during the last thirty years are said to be of a superior kind. In this part of Scotland the *bothie* system is established. The married labourers, as a rule, live in cottages, and the single, both men and women, are accommodated in bothies. Difficulty sometimes arises when the single labourers wish to marry, and it is not possible to supply cottages for them. In such cases there is a distinct grievance, which can only be remedied by an increase of cottage accommodation for married labourers. The condition of the labourers in the eastern counties of Scotland is stated to be decidedly favourable. They seem to be a hard-working, frugal, and well-educated race, and to be much better off than the labourers in many agricultural districts of England.

"The condition of the dwellings of the crofter and cottar populations of Scotland differs very materially, and they may be divided into three classes—1st, the black houses of the old and of the improved type; 2nd, the white houses; and 3rd, the houses of a superior kind constructed in recent years.

"Black houses are common to Skye, the Long Island, and the Western Islands, where they are found in great variety; they may also be seen on the northern and western coasts of the mainland, and to some extent in the central Highlands, but are said to be generally disappearing. Some of them are considered fairly comfortable, but the majority are undoubtedly confined, dark,

miserable, and unhealthy. They are built by the crofters themselves, without skilled labour, and without imported materials. They are constructed of blocks of stone, without mortar, and are completed with turf and other materials, hastily and rudely put together. They differ very considerably in condition, according probably to the means and tastes of the occupier, the worst being found in some parts of Skye and the Island of Lewis. Some of them, for instance, have only one entrance for the cattle and the inhabitants, and have no partition between the byre, the kitchen, and the sleeping apartment—all the inhabitants, human and animal, being under the same roof, in the same undivided space. Many of these houses have no windows at all, light being admitted only through the door or the aperture through which the smoke escapes, the fire being usually of peat, burned on a flat stone in the centre of the house. The accumulation in these dwellings of the dung of cattle and other unwholesome substances, the prevalence of dirt, the absence of separate rooms, and of fresh air, render the inhabitants of them very liable to the contagious fevers which from time to time break out in the crofter villages, chiefly in the spring; and this type of house may be said to be the worst that exists, though very common, among the crofter population. These houses may be considered the work of the tenant, being built by him, though sometimes a gift of timber or thatch for the roof is made by the landlord. There are other black houses in which there is only one door, but which contain a partition between the cattle and the human inhabitants. These houses, though of a rude character, are frequently free from draughts, and not uncomfortable or so unfit for human dwellings as the old black houses."

We now come to that portion of the Report which relates to Ireland, which is of special value when viewed in relation to the English and Scotch Reports. It is much to be regretted that Her Majesty's Commissioners were unable to devote a longer time to the investigation of the question in this country. There are many reasons, to which I shall not here refer, which would point to the necessity of a greater proportional expenditure of time in the investigation of social questions in Ireland than is required in England or Scotland; and therefore the limited time at the disposal of the Commissioners is the more to be regretted. The following quotations from their Report show that they were not satisfied with the housing of the working classes in Irish towns, with the exception of Belfast, upon which the Commissioners

express a favourable opinion. They express no opinion regarding the housing of the country labourers, as I have before stated.

“The defects of the Dublin tenements are—that the houses are very old; that the woodwork is decayed, so that it is not easy to keep them in a cleanly state; that the floors frequently make a considerable angle with the horizon, owing to the subsidence of one of the walls; that the floors are rough and worm-eaten, and often so patched that the patches project above the general level of the floor, thereby preventing the proper cleansing of the floors; that the windows are frequently without pulleys to the sashes, and that they are also frequently composed of ill-fitting sashes, which in stormy weather permit the wind to blow freely into the rooms; that the panes of glass are often patched or broken; that the staircases are often dark, ill-ventilated, dilapidated, and too steep; that the approach to the yard of the house is frequently so difficult that the tenants prefer the more convenient access to the streets and empty their slops into the street during the absence of the police; that the sanitary accommodation is defective, one privy or water-closet being common to a dozen families, and being often situated in some such objectionable situation as the area or kitchen, there being no yards in which to place them; that the basement stories, which have been cleared of their tenants, through the action of the Corporation, have become in many cases very filthy; that the yards are rarely asphalted or concreted; that their clay surfaces are often very damp, and the children who use the yards as play-grounds are liable to suffer from the dampness, especially when they are unshod, as is very often the case; that too many families inhabit the same house, and use a common staircase, and that when scarlet fever, measles, or typhus occurs in such a house it is peculiarly liable to spread from room to room.”

“The condition of Belfast seems to be, on the whole, satisfactory. The borough is the most prosperous in Ireland. Its population has increased from 37,117 in 1821 to 222,000 at the present time [1885]. During the last 20 years its valuation has doubled. Its death-rate is not low, but it appears to be decreasing rather than increasing. The dwelling accommodation seems to have kept pace with the population, the number of new buildings erected year by year being over 1,000. In consequence of the continual building that has been going on there has been no difficulty in rehousing the population displaced by the extensive improvement scheme. Belfast being an entirely new town, there are not many houses

inhabited by the working classes which were originally intended for richer people, and the tenement house is scarcely found at all. The rule is that houses are usually built for only one family."

"The housing of the working classes at Cork appears to be in a very bad condition in many respects. There are in that city 1,732 tenement houses, occupied by about 22,000 persons. The tenements are said to be in a disgraceful state, and the overcrowding has existed for 50 years with scarcely any improvement."

"The state of affairs that exists at the present time at Limerick has been described as being as bad as is possible. A former mayor and sheriff says that matters 'could not be much worse anywhere in the world.' Many of the tenement houses have no back yards, and none of them have closets. The people throw the refuse out of doors, or if there is a yard attached they deposit everything there. The floors are very bad; the rain comes in through the majority of the roofs; and many of the inhabitants are so poor that they have not 'a stick of furniture' in their rooms, and are compelled to sleep on the floor. Cellar dwellings are inhabited to some extent. Some have been closed, but many are still open which are unfit for habitation. The highest of these cellars is 8 feet, and the lowest but 5 feet in height; and in one cellar two families of eight persons in all were living. The water supply may be said to be disgraceful. Notwithstanding the natural advantages of the city, there is no water supply at all in any of the lanes of Limerick, where the poor live. The people have to go to a fountain, sometimes a quarter of a mile from their houses, which flows for an hour and three-quarters, and here they scramble for a little to last till the next day. Considering the state of the tenement houses, and that a very large number of the labouring population live in them, the water supply, and the fact that the town is scarcely ever free from typhus or other fever, it is not surprising that the death-rate is a high one—27 per 1,000 of the population."

"The evidence from Waterford is some of the most remarkable that has been given before your Majesty's Commissioners. Waterford is one of the Irish municipal towns which possess the £10 suffrage, and a high property qualification for membership seems to have been imposed, according to the statement of the Town Clerk, notwithstanding the passing of the Act of 1880 already referred to. The Corporation is very wealthy, its revenue being such that, with the exception of the water rate, it has sufficed to pay the whole of the municipal expenses of the town. The death-

rate has lately on one occasion reached the remarkable figure of 42 per 1,000, which the medical officer attributes to three causes—the bad drainage of the city, the overcrowding, and the habits of the people. There are about 1,800 dwellings within the municipal boundaries occupied by the working classes, of which 20 per cent. are tenement houses. Notwithstanding the state of health of the town and the powers which are given by the Public Health Act, no bye-laws have been made with regard to the tenement houses in the face of the medical officer's own statement that overcrowding is one chief cause of the death-rate. The sanitary staff consists of seven sub-officers who do not give their whole time to their sanitary duties, as they have other work to perform, such as looking after the markets and the tolls. The Corporation are themselves large landowners, and though they do not actually receive the rents of many houses, some of the most insanitary dwellings are built upon corporation property, without any action being taken for their regulation under the ample powers afforded by the law. They have not even adopted the clauses of the Towns Improvement Acts to prevent the construction of new houses in improper situations. As the town clerk expressed it, the Corporation of Waterford has peculiar ideas about taxation, and they are afraid that if they let the thin end of the wedge in at all with regard to the adoption of the clauses of the Towns Improvement Act it would lead to the introduction of taxation. Therefore lately there has been no municipal taxation of any description in Waterford. The borough fund provides for the expenditure in the city. In the houses which the corporation hold themselves they make no restrictions as to occupation by members of more than one family. On one occasion they made an attempt to close 50 houses, but on a demonstration being made by the inhabitants the mayor consented not to disturb them. In fact, the witness added, 'we had no place to put them in.' There are in Waterford, which has a population of less than 23,000, 1,180 houses which are occupied by more than 2 families, and in some instances there are as many as 10 families in one house. If more than one family is found in one room proceedings are taken, not under bye-laws, but as against a nuisance injurious to health. The magistrates, however, decline to encourage such proceedings, and they, therefore, have no great effect. Many of the members of the Corporation are interested in insanitary property."

(To be continued.)

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Through the Ivory Gates; Studies in Psychology and History. By WILLIAM W. IRELAND, M.D., Edin.; formerly of H. M. Indian Army; Corresponding Member of the Psychiatric Society of St. Petersburg, and of the New York Medico-Legal Society. Edinburgh: Bell & Bradfute, 12 Bank-street. London: Simpkin, Marshall & Co., and Hamilton, Adams & Co. 1889.

"THROUGH THE IVORY GATES" may be considered as the second volume of the author's historical and physiological studies. The personages treated in it are not historically as important as those who form the subject of the preceding volume, "The Blot on the Brain," but the writing is equally clear and terse, and Dr. Ireland has again to be congratulated on his excellence of work. His biographical sketches of Swedenborg, William Black, Louis II., of Bavaria, Charles T. Guiteau, Louis Riel, Gabriel Malagrida, Theodore of Abyssinia, and Theebaw of Burmah, are highly interesting reading. His critical examination of their mental state is a valuable contribution to the study of psychology and forensic medicine, and should do much to assist our legal brethren and legislators in interpreting and framing laws dealing with questions of lunacy.

Nothing is more sad than the condition of the unfortunates who, in figurative language, are visited by spectres which pass through the Ivory Gate:—

"Sleep gives his name to portals twain,
One all of horn, they say—
Through which authentic spectres gain
Quick exit into day;
And one which bright with ivory gleams,
Whence Pluto sends delusive dreams."

"Harmonious, sustained manhood, without disproportion, or anomaly, or eccentricity—that god-like type in which the sane divine energy seems to thrill with equal force through every

faculty of mind and body, the majesty of a single power never deranging the balance or impairing the symmetry of the whole," is one of the rarest of gifts. Absolute mental and physical health is almost unknown—we can only notice the more marked deviations from the normal.

But because a man's mind is unsound, all of which he says is not therefore folly. The insane not unfrequently have spoken and written words of wisdom, and originated thoughts that have proved blessings to the succeeding generations of men. Mahomet, George Fox, and Comte may be cited as examples. Their ideas are often marked by originality, and in advocating their views they are not deterred by the fact that they are running contrary to preconceived and accepted opinions, and as long as their acts are not such as threaten danger either to themselves or the public, their freedom from restraint is a positive good. To the thoughtful reader the words and acts of the unfortunate victim of delusions and hallucinations cannot but be interesting and instructive, and Dr. Ireland has, in the present volume—by an able critical examination into the psychological condition of Swedenborg, to whom he devotes more than one-third of the book—done much to assist future students of the science.

In one respect, however, we think the author might have been more full—to wit, the influence on Swedenborg of his parentage and age. We in no way wish to say anything against the manner in which Dr. Ireland has done his work, but even some specialists on psychology might not be quite familiar with the great revolution in thought and action achieved by the thinkers of the eighteenth century, and to a want of intimacy with their work may be ascribed much of the undue praise bestowed on Swedenborg.

The founder of a religion which one hundred years after his death numbers about one million of believers, with between seventy and eighty churches, is very likely to be over-praised by his followers and abused by his theological opponents, but a psychologist should be influenced neither by his followers nor his opponents, but solely by a desire to justly estimate the character of the man. To form this estimate we must consider the ideas inherited by his age from preceding ages, and how much he did to effect his own and succeeding ages for good.

Emerson, in his well-known essay on Swedenborg considers him as the representative of the Mystics, and places him amongst the greatest and most original thinkers of his own or any other age.

Emerson himself was eccentric; his religious views were condemned by the Theological Faculty of Harvard. And the Transcendental Club, which owes its origin to him, finally resolved itself into the Brook Farm Community, which came to grief. He found in John Brown, of Kansas, "the saint whose martyrdom will make the gallows glorious like the cross," and in Swedenborg a divine seer, a universal genius, whose discoveries antedated many of the most brilliant of latter-day discoveries. Plainly Emerson had the faculty so common to lovers—to wit, that of creating an ideal personage; and this ideal, and not the ordinary human being, absorbed all his love and admiration. From such a man we cannot form a true estimate of the character of the Mystic.

Swedenborg can be known by his writings, and they are sufficiently voluminous to satisfy the most exacting of his followers. Nor can anyone complain of want of variety, for they treat of all things of heaven and earth. Like Montaigne, he might have written "All the world may know me by book," for like the witty Frenchman he was daily "taking an account of himself continuously and curiously." We know not only his acts, but even his dreams and the interpretation thereof.

Emmanuel Swedberg, or Swedenborg, was the third child and second son of Jasper Swedberg, Chaplain of the Royal Horse Guard, and of Sara, daughter of Albercht Behm, Assessor of the Royal College of Mines. He was born at Stockholm on the 29th of January, 1688. In 1692 his father was appointed Professor of Theology at Upsala:—

"Emmanuel was brought up in the University Square of that little town, in the ecclesiastical and religious atmosphere which surrounded his father, who was at the same time Dean of the Cathedral of Upsala, Professor of Theology, a zealous preacher, and a busy writer on religious and other subjects.

"He was the first who wrote a Swedish grammar and compiled a Swedish dictionary. Though deeply religious Jasper Swedberg was a stirring and ambitious man, who could be both generous and self-seeking. After being ten years at Upsala, he left the University town to become Bishop of Skara."

The name "Emmanuel" was selected for the son because of its significance, by a father who had hallucinations, and, as he believed, the gift of miraculous healing. Angels visited him, directing him what books to read, and his gift of healing was practised on a servant in his employment.

The city of Upsala was from the earliest period rich in legends of the supernatural. The present Cathedral is built on the site of the great Temple of Upsala, which was destroyed by Olaf Tryggvason, King of Norway, after his conversion to Christianity. It was dedicated to Odin, Thor, and Frey. In Upsala at the temple were celebrated the three great feasts of the year—to wit, Yule, which marked the beginning of the year, and was celebrated in honour of Frey, to secure a happy and plentiful year; the spring festival, held in honour of the god of the earth for fruitfulness and victory; and the third, which followed the second festival in about a month was held in honour of Odin for success in military and naval expeditions.

At Upsala was the great meeting, the “Al-thing,” the opening of which was usually celebrated by a feast on horse-flesh. By declining this food Olaf bore witness to his change from the Viking faith.

The most solemn sacrifices of the Vikings were offered at Upsala, and every ninth year their kings, warriors, and seers offered sacrifices to Odin, Thor, and Frey in the great temple. “They chose, among the captives in time of war, and among the slaves in time of peace, nine persons to be sacrificed.” Occasionally, however, the noblest of the kingdom were sacrificed, and should there be a succession of bad harvests the king was, as a rule, burned to propitiate Odin; thus perished the King of Vermaland. Nobles were sometimes chosen as victims when an especial favour was sought. Earl Hakon, of Norway, offered his son as a sacrifice to Odin for victory over the Jomsburg pirates; and for long life Aun, King of Sweden, sacrificed his nine sons.

The temple was surrounded with a grove, every tree and leaf of which was regarded as sacred. It was full of the bodies of men and animals, which had been sacrificed. In this grove and in the temple oracles were consulted. Witchcraft and sorcery were taught by the gods themselves in the sacred grove of Upsala.

The witchcraft was of two kinds, “Galdr” and “Seid.” “Odin was called the father of galdr, and those who practised it were called *galdrasmid*, or galdr-smiths, and sometimes galdramen, who, while singing their formularies, used at times to mark certain mystic runes, which were used with incantation. . . . Such galdr were able to cure wounds and sickness, allay fire and storm, rouse up the dead in order to consult them as to the future, and win the love of women.”

Freyja, the goddess of love, taught the seid, which, with songs and incantations, was chiefly performed by women. Vanlandi, the son of Sveydir, King of Upsala, was drawn to Finnland by the seid woman, Huld.

Witches, by rubbing the bodies of Vikings, found out the vulnerable part of their body, which part was thereupon protected. They also laid *Mal*—magical runes—on weapons which enabled their owners to hold others spell-bound.

“The people were strong believers in ghosts, and thought that the spirit of the dead could come into the mound where the body was buried. When they were seen at night at their mounds they were surrounded by fire, and it was said that the gate of Hel, where the dead were supposed to be, was open.”

At Upsala was fought the great battle between Styrbjorn and King Eric, and on the field of battle was raised a monument to the brave Asborn, with the inscription, “He fled not at Upsala, but fought whilst he had weapons.” In that city so full of legendary lore, Swedenborg passed his childhood, and during those years astrology, alchemy, second-sight, and witchcraft were unhesitatingly accepted.

Dryden cast the nativities of his sons; Sir William Dugdale, Elias Ashmole, Dr. Grew, and other respectable characters of the seventeenth century, were members of an astrological club. Lilly, whose second edition of “Christian Astrology” appeared in 1659, gravely tells us of his conversations with angels, and that their conversation resembled *Irish*.

Astrologers were in favour with all classes. Lilly was consulted for the hour which would favour the escape of Charles I. from prison, and when he was a Roundhead he foretold for June, 1645, that “If we now fight, a victory stealeth upon us.” A fight did occur at Naseby, and Lilly’s reputation was confirmed, and quite overshadowed that of his rival, the Royalist Wharton. In France, so late as the end of the seventeenth century, children immediately after their birth were brought to an astrologer to have their horoscopes cast. Even the enlightened Medicean family were guided by the advice of astrologers; the patronage of Catherine de Medici was bestowed equally on Machiavelli and Nostradamus, the latter of whom cast the horoscope for her son Henry III., of France.

The diary of Elias Ashmole tells how long the alchemist kept

his hold on the public. Under the date of the 13th of May, 1653, Ashmole writes—"Father Backhouse (an astrologer and alchemist) lying sick in Fleet-street, over against St. Dunstan's Church, and not knowing whether he should live or die, about eleven of the clock, told me in *syllables* the true matter of the philosopher's stone, which he bequeathed to me as a legacy."

"Rare Ben Jonson" has immortalised the most notorious of the alchemists, Dr. Dee, who was consulted by Burleigh to find a fortunate day for the coronation of Queen Elizabeth, for Dr. Dee also practised astrology, and later in his life he was hastily summoned to prevent a sudden mischief impending over her Majesty's person. A great puppet of wax, representing the queen, was discovered lying in Lincoln's Inn Fields, with a huge pin stuck through its breast. Dee undertook to quiet "Her Majesty and the Lords of the Honourable Privy Council" within a few hours, but "first insisted that, in the solemn disenchantment, Mr. Secretary Wilson should stand beside him to witness that he only used 'godly means.'"

Dee was frequently consulted by Elizabeth, and retained her favour even after his failure to transmute metals for the Emperor Rodolph, although assisted by Kelley, his "Skryer." He published alchemical, astrological, and cabalistical treatises, and recorded some of his conversations with the angels.

Belief in astrology and alchemy gave rise to many absurdities, but the belief in witchcraft promoted deeds that have disgraced humanity. Every sect of Christians seemed to vie with each other in deeds of appalling cruelty. The Reformation, an open Bible, and familiarity with the life of Christ, all failed to diminish, nay, rather seemed to increase and intensify the monomania that found in the study of chemistry and natural history, and in the feebleness of old age, an evidence of possession by the devil; and in the burning of the friendless, helpless, and decrepit, a duty to God and man.

Babes at the mother's breast were to the men of the period devoid of innocence and in the possession of devils:—"I commande thee, uncleane spirite, in the name of the father, of the sonne, and of the holy ghost, that thou come out, and departe from these infantes, whom our Lord Jesus Christe hath vouchsaued to call to his holy Baptisme, to be made membres of his body, and of his holy congregacion. Therefore thou cursed spirite, remembre thy sentence, remembre thy iudgemente, remembre the daye to be at

hande, wherin thou shalt burne in fyre everlasting, prepared for thee and thy Angels. And presume not hereafter to exercise any tyrannye towarde these infantes, whom Christe hathe bought with his precious bloud, and by this his holy Baptisme calleth to be of his flocke." Such is the form of exorcism as formerly used in the Baptismal Service in the Church of England, and published in "The First Prayer-Book of King Edward VI., 1549."

Puritans who for liberty of conscience preferred to dwell in the wilderness of New England, were not proof against the belief. Cotton Mather, who in 1714 was chosen a Fellow of the Royal Society of London, and was made an Honorary D.D. of Glasgow University in 1710, the founder of the "Society of Peacemakers"—the professed business of the Society being "to compose differences and prevent law-suits"—is best remembered in his native city, Boston, Mass., as the persecutor of those suspected of witchcraft. His "Wonders of the Invisible World, being an Account of the Trials of several Witches lately executed in New England;" together with his—(1) "Observations on the Nature, the Number, and the Operations of Devils;" (2) "A Short Narrative of a late Outrage committed by a Knot of Witches in Swedeland, very much resembling, and so far explaining that under which New England has laboured;" (3) "Some Counsels directing a due Improvement of the Terrible Things lately done by the unusual and amazing Range of Evil Spirits in New England;" (4) "A Brief Discourse upon the Temptations which are the more Ordinary Devices of Satan. Published by the Special Command of his Excellency, the Governor of the Province of Massachusetts Bay in New England." Printed in London in 1736 in quarto.

Hawthorne, in his "Tales of the Province House," perpetuates the story of the Rev. Dr. Cotton Mather's superstition and inhumanity, and Bancroft's "History of the United States" tells how much suffering and misery the learned monomaniac's zeal for the suppression of witchcraft caused.

Followers of the Reformed Faith were not the only offenders. A bull of Pope Innocent VIII., published in 1484, says:—"It has come to our ears that numbers of both sexes do not avoid to have intercourse with the infernal fiends, and that by their sorceries they afflict both man and beast. They blight the marriage-bed, destroy the births of women and the increase of cattle; they blast the corn on the ground, the grapes in the vineyard, the fruits of the trees, and the grass and herbs of the field."

Thousands of aged women were committed to the flames under an accusation of denying Christ, dishonouring the crucifix, and solemnising a devil's Sabbath with the fiend.

To the honour of medicine, one of the first to oppose the mad fanaticism was Wierius, a physician of the Netherlands, who, in his treatise "*De Præstigiis*," published at Basle in 1504, argues that the unfortunate wizards and witches were rather the devil's victims than his accomplices. In 1584 an English gentleman, Reginald Scott, published "*The Discoverie of Witchcraft*," in which he strove to stay the fury of the people by advocating that the accused persons should be brought face to face with their accusers and given a fair trial. If guilty, the punishment should be proportioned to the crime. "Turning a jug of ale sour" hardly merited death by burning. Scott dared not openly deny witchcraft—belief in it was held to be a fundamental part of the Christian religion. A large box was placed in the porticoes of the places of Christian worship, with a slit in the box-lid, through which slit any person might shove a piece of paper charging a neighbour with the crime of witchcraft. The charge had not to be signed, and if any human being or domestic animal in the parish had then or within a short period previously been at all ill, the accused person was put to death. Scott's appeal to reason was answered by no less a person than James I., whose "*Demonology*" is valued, not only as showing the spirit of the age, but as having been the source from which Shakespere took his description of the witches in *Macbeth*. John Evelyn, under date of the 4th February, 1693, writes: "Unheard-of stories of the universal increase of witches in New England; men, women, and children devoting themselves to the devil, so as to threaten the subversion of the Government."

Sir Thomas Browne ("*Religio Medici*") confesses his belief in witches. "I have believed, and do now know, there are witches;" nevertheless, he adds—"I think, at first, a great part of philosophy was witchcraft, which, being afterwards derived to one another, proved but philosophy, and was, indeed, no more than the honest effort of nature. . . . Again, I believe that all that use sorceries, incantations, and spells, are not witches or, as we term them, magicians." One of the last elaborate treatises in support of witchcraft was Meric Causaubon's "*Credulity and Incredulity*," published in London in 1670.

Bishop Jewel, in a sermon preached before Elizabeth in 1584, says, "It may please your Grace to understand that witches and sorcerers

within the last four years are marvellously increased within your Grace's realm. Your Grace's subjects pine away, even unto death, their colour fadeth, their flesh rotteth, their speech is benumbed, their senses are bereft."

Glenville, one of the founders of the Royal Society, published a work entitled "Considerations on the Being of Witches and Witchcraft." Bishop Hall spoke of a place as having more witches than houses.

At the Essex Assizes of July, 1566, Mother Waterhouse was hanged, on her own confession of execrable sorcery, by her practised for fifteen years.

Dr. John Fian, schoolmaster of Saltpans, near Edinburgh, was charged with raising a storm at sea to wreck James I. of England when on his voyage to Denmark to visit his future wife. He was furthermore charged with having rifled the graves of the dead to make hell-broth, and of running after a cat because the devil wanted it to cast into the sea to raise storms. Fian refused to confess himself guilty, and the torture was commenced. "First a rope was tied slackly round his head, and between the head and the rope a strong stick about two feet long was inserted. Then the tortures began. The stick was twisted round and round, shortening the cord till the skull was crushed in upon the brain, and at every turn the victim was asked if he would confess. When the rope had cut through the scalp to the bone, and the whole skull was squeezed out of shape, for fear of death the rope was slackened. . .

Weak, pale, and in dreadful agony, the victim was now attacked on his other extremities, the feet. Each foot and leg was placed on a strong iron box reaching to the knees, and between the leg and the box wedges were loosely inserted. 'Will you confess?' said the inquisitor. No answer, and the wedges were driven home by a huge mallet. . . Down again and again fell the hammer upon the wedges, till the skin and flesh, muscle and tendon, bone and marrow were one mass of soft and bloody jelly. . . Raving mad, he was left till next day. . . They wrenched the nails off his fingers with a pinchers, and stuck pins through the parts his nails had covered. . . They put his thumbs into thumbscrews till the bones were crushed into splinters. Still no confession, so they strangled him and burned him at the stake on the Castle Hill of Edinburgh on Saturday, January the 26th, 1591." Thirty persons were burned for causing, by witchcraft, His Gracious Majesty to have an unpleasant journey from Denmark.

In 1618 Margaret and Phillipia Flower were burned as witches at Lincoln, the evidence being that the Flowers had been unpleasant to the Earl and Countess of Rutland. Sir Henry Hobbert, Chief Justice of the Common Pleas, condemned to death in the same year Joan Wilmot for keeping an owl, which she called "Pretty"; Ellen Green for keeping a kitten and a tame rat; and Anne Baker, who had a white dog. "What can old women have cats, dogs, and owls for but to work mischief?" was the query of the learned judge.

Popes Alexander VI., Leo X., and Adrian VII., supplemented the bull of Innocent VIII., adding to its severity and feeding the witch-mania which had for four centuries raged in Christendom. Under the bull of Innocent VIII. Heinrich Institor and Jacob Sprenger became inquisitors for the detection of witches in Germany, and with the aid of the Rev. John Gremper they drew up the infamous document, "The Witches' Hammer," in which a regular form of trial is laid down, and a set of questions furnished for testing those suspected of the diabolical crime of witchcraft. In England witch-finding had its professors; Mathew Hopkins, of Mannington, Essex, hunted almost 4,000 persons to death by burning between the years 1643 and 1661.

The Scotch Assembly of Divines, between 1640 and 1649, passed five acts against witches, each more rigid than the former one.

Dr. Sprenger calculates that 9,000,000 persons were executed for witchcraft.

The laws against witchcraft were repealed in England in 1736, but the Irish Act was not repealed until 1821. Even in 1863 the belief had not wholly died out—in that year a man at Hedingham, in Essex, was drowned for being a wizard.

At Huntingdon, in England, in 1716, Mrs. Hicks and her daughter, a child of only nine years of age, were hung for "selling their souls to the devil, and raising a storm by pulling off their stockings and making a lather of soap." One of the last judicial executions in Scotland took place at Dornoch in 1722.

A judicial execution for witchcraft took place in Switzerland as late as 1782.

Many men, otherwise most estimable, believed in the superstition. John Wesley died believing in it (1791).

During the sixteenth, seventeenth, and eighteenth centuries, it was a fundamental doctrine of the professed Christian that all error was to be eradicated, and that in the good work force was to be

justifiable. Unfortunately the only standard of truth was the theological opinion of the persecutor, and the slightest deviation from the standard was punished with death. Jansenist and Jesuit, Catholic and Lutheran, Episcopalian and Calvinist, were at each other's throats, but all united their energies to hunt down Jews, Quakers, and Witches. Here and there some humane beings protested against the bitter persecution and the narrow-mindedness of the persecutors, who had yet to learn that "Charity" was the greatest of the virtues.

To Wierius and Scott succeeded Ford, who wrote "The Witch of Edmonton."

Elizabeth Sawyer:—

"And why on me! Why should the envious world
 Throw all their scandalous malice upon me!
 'Cause I am poor, deform'd, and ignorant,
 And like a bow, buckled and bent together,
 By some more strong in mischiefs than myself—
 Must I for that be made a common sink
 For all the filth and rubbish of men's tongues
 To fall and run into! Some call me witch,
 And, being ignorant of myself, they go
 About to teach me how to be one; urging
 That my bad tongue (by their bad usage made so)
 Forespeaks their cattle, doth bewitch their corn,
 Themselves, their servants, and their babes at nurse,
 This they enforce upon me; and in fact
 Make me to credit it."

The breaking on the wheel of Calas in 1762 roused Voltaire's protests against the persecution that was disgracing humanity. "He agitated the whole world with indignation and pity by means of narratives, pleas, short statements and long statements, passionate appeals and argumentative appeals. Powerful ministers, fine ladies, lawyers, men of letters, were all constrained by his importunate solicitations to lend an ear to the cause of reason and tolerance, and to lift up an arm in its vindication."

The great mass of the people looked for supernatural aid in every difficulty, and all manner of miracles were performed. The most notorious shrine was that of the Jansenist Deacon Paris, in St. Médard cemetery, where the "Convulsionaries" took their rise. From the moment Lero, the first miraculously cured visitant to the Deacon's tomb, was seen to walk without his crutches there was a rush to St. Médard; the cemetery became too small to hold the multitudes. One miracle done, ten others, twenty others,

produced themselves on the same scene before the eyes of a public prepared to believe everything, and to submit nothing to the judgment of reason.

Each miracle raised a cry of surprise and enthusiasm which inspired all hearts, The lame walk, the blind see, the deaf hear, and there are twenty witnesses—lawyers and physicians—who draw up a legal statement of each miraculous *séance*.

The Deacon died in 1727, and in 1748 Sieur Carré de Montgeron published the third edition of this book entitled, "The Truth of the Miracles Wrought by the Intercession of the blessed Paris."

Swedenborg knew of these excesses. Astrology, alchemy, and witchcraft were not dead when he had reached manhood. He must have known that thousands of decrepit, friendless, poor women, "without enthusiasm, without hope, without even the consciousness of innocence, decrepit in body, and distracted in mind, compelled in this world to endure tortures, before which the most impassioned heroism might quail, and doomed, as they often believed, to eternal damnation in the next—they not unfrequently killed themselves in the agony of despair." Nevertheless, Swedenborg did nothing to stay the monomania, and of the many great men who were his contemporaries, he has, with the one exception, Sir Isaac Newton, shown no desire to make their acquaintance. Much has been made of his publishing his religious views in a sceptical age, but the writers forget that only a few, and those men of large and liberal views, had shown themselves sceptics, the great mass of the people abhorred the title, and were at least professed Christians. Swedenborg's hallucinations, illusions, and superstitions harmonised with their early teachings, and rather secured their good-will than incurred their enmity.

Possessed by a restless spirit and a highly imaginative mind, Swedenborg passed from one study to another before he had mastered any, and once he got hold of a few facts he commenced building theories as naturally and industriously as a spider spins a cobweb. His greatest practical feat was that of saving Charles XII., at Frederikshald, by bringing some vessels overland for fourteen miles—a feat which was nothing more than an imitation of Pizarro's Mexican one, and one which cannot be compared to the brilliant engineering feats of Vauban, who was his contemporary. His warmest admirers do not claim that his studies in anatomy advanced our knowledge of the subject, and they are very poor indeed when compared with the work of Willis, Harvey, and

William and John Hunter. His two large octavo volumes on the brain are most unedifying volumes, and contain about as much original matter as is contained in one of the Carmichael Essays. The reader is wearied with quotations from Heister, Winslow, Malpighi, Morgagni, Boerhaave, Leeuwenhoek, Swammerdam, and others, and if in his vague surmises Swedenborg chanced on an idea that later workers have found to contain a germ of truth, it is no more to be wondered at than that a cobweb catches a fly. A man who spent a long life spinning theories may reasonably be expected, some time or other, to chance on a truth.

Although Swedenborg did nothing original in chemistry, the time was ripe for discoveries, as is shown by the good work done by Priestley, Cavendish, Scheele, and Lavoisier, his contemporaries. He had not even the grasp of the subject possessed by Mayo, and was a long way behind his successor and fellow-countryman, Berzelius. Nothing he ever did in practical engineering—or indeed for that matter in anything else—so much advanced material prosperity as Watt's steam engine, which was patented in 1769.

Nor can it be claimed for him that he altered the current of men's thoughts, as Hume, and Locke, and the Encyclopædists did. What a poor figure he cuts beside Diderot fighting single-handed in his garret against superstition, ignorance, and abusive privilege! He does not compare favourably even with Madame Guyon, whose Quietism at least promoted charity and peace.

Infected with the spirit of the sixteenth century, Swedenborg seemed incapable of recognising the wonderful and impending change that his great contemporaries were effecting. He was striving to perpetuate the superstitions and follies of a preceding age on people who were preparing a cycle of revolutions. This was all the more remarkable because he had visited and knew the two most enlightened countries in Europe—England and Holland. He might have recognised in the power of Heinsius, and the rejection of the doctrine of divine right to rule badly in the expulsion of the Stuarts and the rule of Walpole, the increased power of the middle classes.

In England his time was spent in shifting from lodging to lodging, and surreptitiously picking up mechanical arts, and in writing a diary in which we have nothing better than the interpretation of his dreams and an elaboration of his hallucinations.

The border-land of sanity at last was passed, and in 1743 he became, in the estimation of all others than his disciples, unmis-

takably insane. He lived henceforth in a world of beings who possessed ubiquity, incessant activity, with motion in unappreciable time. He conversed with these imaginary beings as did Lilly and Dee in a by-gone age. He had visions of a heaven where he talked with and lectured former dwellers on the earth, and always had the best of the argument, his celestials and glorified terrestrials being very poor creatures. Even the wild fancy of his uncontrolled imagination failed to create any being whose personality approached in sublimity, beauty, or intelligence, the mythical heroes of his Fatherland, or the creations of the reason-guided imagination of Dante, Shakespere, or Milton.

Followers and disciples came in time to range themselves under Swedenborg as a divinely inspired seer, as they always do come to every preacher of a new faith. Appolonius, of Tyona, Mahomet, John Smith, and Johanna Southcote, all tell how in latter days, as in the days of St. Paul, the human mind craves some new thing. But what we contend for is that Swedenborg did not offer any new thing, but gave them of the pernicious superstitious of the past after they had percolated through his own brain.

In Dr. Ireland's book the reader will find the story of Swedenborg's life excellently told, and the absolute belief he had in the truth of his doctrines, and the reality of his hallucinations, giving a further proof of the strength and intensity of subjective sensation.

The other character-sketches in the book possess nothing of the importance, from a psychological point of view, which that of Swedenborg does, and are principally valuable from the specialist point of view.

We have given "Through the Ivory Gates" much greater space than usual, but the importance of the subject and the excellence of the book is our excuse.

Star-Land. By SIR ROBERT STAWELL BALL, F.R.S., Royal Astronomer of Ireland; author of "The Story of the Heavens," &c. London: Cassell & Company. 1889. Crown 8vo. Pp. 376.

WITH singular appropriateness, "Star-Land" was published on the eve of Christmas, 1889, and we cannot doubt that before this notice is read Sir Robert Ball's fascinating and instructive pages will have afforded pleasure to thousands of juvenile readers in their Christmas holidays.

"Star-Land" is the outcome of two courses of lectures delivered before juvenile audiences, by the talented Astronomer-Royal of Ireland, at the Royal Institution of Great Britain, at Christmas-tide in 1881 and 1887. These lectures are as charming for their simplicity as they are marvellous for their scientific value. Sir Robert Ball is a writer of no mean parts, and his masterly knowledge of both astronomy and mathematics enables him to explain in simplest language the most abstruse truths about the universe. Young and old will read "Star-Land" with profit and delight, and we can scarcely imagine a more useful Christmas or New Year's gift for a school-boy or school-girl than these "Talks with Young People about the Wonders of the Heavens." The illustrations are numerous, and as a rule well drawn. An exception is Fig. 22 (on page 54), showing the changing seasonal height of the sun above the horizon. This drawing represents the sun as too low in the sky at noon on the longest day, and too high in the sky at noon on the shortest day.

We heartily recommend "Star-Land" to all our readers.

Pathological Anatomy of Diseases, arranged according to the Nomenclature of the Royal College of Physicians of London. By NORMAN MOORE, M.D.; Fellow of the College, and one of the Curators of its Museum; Assistant-Physician and Lecturer on Pathological Anatomy to St. Bartholomew's Hospital, &c. London: J. & A. Churchill. 1889. Pp. 416.

THIS book is not a work on systematic pathology, but is rather an account of the morbid anatomy seen at *post-mortem* examinations made on medical (as opposed to surgical) cases. The author states in his preface that "it is only by seeing and understanding as many *post-mortem* examinations as possible that students can attain clear notions of disease, sound principles of diagnosis, and accurate views of the right direction of treatment. In this book I have constantly kept these three objects in mind, and have tried to make clear the anatomical appearances proper to each disease, and to show the direct relation of those appearances to symptoms and to treatment." He has followed the order of the "Nomenclature of Disease" issued by the Royal College of Physicians of London.

The descriptions of general pathological processes—inflammation, dropsy, &c.—are extremely short. On the other hand,

accounts are given of a large number of *post-mortem* examinations in cases of various diseases, which Dr. Moore has made at St. Bartholomew's Hospital. We feel extremely doubtful as to the advantage of introducing illustrative cases into a student's text-book as small as this one, as thereby a great deal of space is taken up which, we think, might have been more usefully employed in giving fuller accounts of the morbid anatomy of many diseases.

In another respect we cannot congratulate Dr. Moore on the arrangement of his book. He has, in our opinion, devoted far too much space to certain diseases which are by no means the most important from a student's point of view. Thus there are 8 pages on sclerosis of the brain and spinal cord, illustrated by 8 figures; disseminated sclerosis occupies 6 of the pages, and all the figures; the other forms of sclerosis, although occurring much more frequently, being dismissed with a few lines each. Again, there are 6 figures of microscopic sections of malignant tumours. Four of these are taken from one case of endothelioma of the pericardium—very interesting, no doubt, to Dr. Moore, but hardly deserving such a prominent position in this little book, to the exclusion of far commoner, and therefore more important, varieties.

Some of Dr. Moore's definitions are curious. For example, we read—"The term malignant indicates that the new growth is likely to progress till it kills the patient. Such growths have no definite boundary or wall, and may grow at all parts of their periphery." We should be sorry to constitute the death of a patient as any test of malignancy, and we have hitherto been accustomed to lay some weight on the fact that a malignant tumour forms secondary growths. "Tuberculosis is the term applied to that morbid state of the tissues in which the tubercle bacillus can live and multiply in them, giving rise to collections of small cells, &c." The tubercle bacillus, we believe, almost always lives and multiplies when inoculated into a guinea-pig, until the animal dies from its effects. According to Dr. Moore's definition all guinea-pigs must be in a state of tuberculosis.

The book is written in a careless style. In the description of amyloid disease of the liver we note the following paragraph:—"Palmar psoriasis, scars of gummata in the viscera, suppuration in bone, or chronic tuberculous ulceration of the lungs, is present as a primary disease." We never before heard of palmar psoriasis as a primary cause of amyloid disease.

Many statements are absolutely incorrect. Thus, sarcomata

are said to be devoid of stroma, and carcinoma of the œsophagus is said to be generally composed of columnar or spheroidal cells.

On the whole, therefore, although the intention with which the book was written was excellent, we regret we cannot say as much of the result.

American Resorts, with Notes upon their Climate. By BUSHROD W. JAMES, A.M., M.D. With a Translation from the German, by MR. S. KAUFFMANN, of those Chapters of "*Die Klimate der Erde*," written by DR. A. WOEIKOF, of St. Petersburg, Russia, that relate to North and South America, and the Islands and Oceans contiguous thereto. Philadelphia and London: F. A. Davis. 1889. 8vo. Pp. 285.

It was with no common interest that we took up Dr. James's work, "intended"—as it purports to be—"for invalids and those who desire to preserve good health in a suitable climate." Hitherto, so far as we know, no standard guide to American Health Resorts had been published, and, therefore, the very title of Dr. James's book bespoke attention.

A perusal of the work has, we confess, caused something of the nature of a reaction—our pleasurable anticipations have been verified only in part; we rise from our study with a feeling akin to disappointment. That the book has merit we do not deny. It, however, attempts too much, and the result is that, while an immense amount of ground is covered, the information given is, in many cases, superficial and sketchy.

For example, on page 14 we read:—"The vegetation of a locality also modifies its climate; an illustration of this is seen in the effect of large pine forests." But no attempt is made to describe or explain what this effect of pine forests on climate may be.

One of the best parts of the work is embraced in the chapters from Dr. Woeikof's "*Die Klimate der Erde*," which fill nearly 100 pages, or more than one-third of the entire book. We must also notice with commendation the elaborate railroad, State, and territorial map of the United States, Canada, and Mexico, which forms the frontispiece of the volume. This map was printed specially to illustrate Dr. James's work. It is of great size—43 inches by 31 inches—and will prove invaluable to readers of this work as well as to travellers in the United States and neighbouring countries.

There is some very curious spelling in Dr. James's book. Here are a few orthographical curiosities:—"Molding" (page 9), "putrification" and "pthisis" (both on page 23), "accomodate" (p. 24), "occured" (p. 30), "benefitted" (p. 157), "isobare" (p. 203, *et passim*), "isotherme" (p. 204, *et passim*), "Rennel-stream" (p. 257, for "Rennel's current," evidently a bad translation), "milometer" (p. 270, for "millimetre," or, if it is preferred, "millimeter"). The English language also is enriched by Dr. James, who speaks of "becoming acclimated" (p. 23), "summering" (p. 25), "gunning" (p. 155). At page 253, Mr. S. Kauffmann, the translator of Dr. Woeikof's work, is responsible for the word "reservatories," that is, "reservoirs."

There are twelve chapters in the book. The first is on "Medical Climatology" and extends to 10 pages. Then follows a short account of the benefits and dangers of Health Resorts in Chapter II. The remaining topics are Sea-side Resorts, Fresh-water Resorts, Mountain Resorts, Trips upon Ocean, Lake, and River; Mineral Springs, Summer Resorts, Winter Resorts. Each of these subjects occupies a chapter. "Therapeutics" is the subject-title of the tenth chapter, in which the term is used as synonymous with the climatic treatment of disease. Mexico and South America are disposed of in four pages, making up Chapter XI.—in fact, the whole of South America is given only three-quarters of a page! Well may we re-echo the author's own words—"This is a neglected field, which is unfortunate, as many pleasant and healthful places for winter residence are found along the coast and in the interior of the country."—(Page 173).

The Diseases of the Bible. By SIR RISDON BENNETT, M.D., LL.D., F.R.S.; Ex-President of the Royal College of Physicians. London: The Religious Tract Society. 1887. 8vo. Pp. 141.

ALTHOUGH thus late in the day, we desire to record our sense of the value of Sir Risdon Bennett's interesting book, which forms the ninth volume of a series published by the Religious Tract Society under the title "By-Paths of Bible Knowledge."

That so distinguished a member of the medical profession should have devoted his time and energy to the writing of an account of the Diseases of the Bible is in itself a wholesome sign. Among the many compensations which a physician enjoys surely the rest which comes from the pursuit of collateral studies is not the least notable.

Sir Risdon Bennett's work is full of curious research. The first and longest chapter treats of Leprosy. The author comes to the conclusion that Biblical Leprosy—in Hebrew, *Tsara'ath*—is *not* Elephantiasis, because in it there is no anæsthesia, it is not accompanied or followed by deformities, and it is not a fatal or incurable disease. In the main the writer agrees with Dr. Greenhill* in concluding—

“That the disease was, in the words of Philo, ‘multiform and changeful,’ modified by various complications, and comprising several species more or less distinct; that some of these varieties were associated with a contagious element, and others non-contagious, and that all the contagious species rendered the patients ceremonially unclean; that it was not a special or miraculous disease, existing only in those times and countries, but an ordinary malady, used occasionally by God for miraculous purposes; that it was not incurable by human means, though troublesome and obstinate; that it was not hereditary, though a disease of common occurrence among the Jews.” (Pp. 50–51).

In subsequent chapters the author discusses the nature of the plagues and epidemic diseases of the Bible; ophthalmic diseases and blindness; diseases of the nervous system, including lunacy and demoniacal possession; Saul's disease and Nebuchadnezzar's disease; the diseases of Job, Herod, Hezekiah, Jeroboam, and the Shunammite woman's son. Chapter VI. is on “Old Age,” and chapter VII. on the “Physical Cause of the Death of Christ,” which, with Dr. W. Stroud,^b he believes to have been rupture of the heart from agony of mind.

In an appendix, Sir Risdon sets forth Küchenmeister's curious and novel theory that the “fiery serpents” described in the twenty-first chapter of the Book of Numbers were specimens of the “*Filaria Medinensis*,” or “Guinea worm.” The dracunculus, or Guinea worm, has long been known as endemic on the borders of the Red Sea and in the Arabian Desert.

There are singularly few points open to adverse criticism in this book. On page 59 we think that the words “typhoid fever” must be a misprint for “typhus fever.” The passage runs thus: “Small-pox is a disease of comparatively recent origin, and typhoid fever, and analogous fevers, to which the wars and famines of the Dark

* Bible Educator. Vol. IV. 1876. P. 76, *et seq.*

^b Treatise on the Physical Cause of the Death of Christ and its Relations to the Principles and Practice of Christianity. By W. Stroud, M.D., London. 1847.

Ages gave rise and rendered so fatal, have been the attendants of social conditions altogether different from those of the Israelites." So far as we know, "war and famine" do not bear any direct causal relation to the origin of typhoid, while they do bear such a relation to that of typhus. "Immedicable," on page 52, is perhaps not a bad word, but it strikes us as an innovation. "Paralysis" and "palsy" are certainly synonymous—a point on which Sir Risdon Bennett seems to have some doubt, for he says (page 90), "These terms, if not absolutely synonymous, are used interchangeably." We always thought that "palsy" was merely the shortened and anglicised form of the Greek "paralysis." The middle English form is "*Palesy*," according to Skeat.

In conclusion, we commend this little book to the attentive study of clerical and medical readers alike. To the author we owe an apology for the delay which has occurred in noticing his work in the pages of this Journal.

Cerebral Localisation in its Practical Relations. By CHARLES K. MILLS, M.D. Pp. 101.

THIS able paper, read before the Congress of American Physicians and Surgeons at Washington, on September 19th, 1888, gives a valuable summary of the present state of knowledge of cerebral localisation of function, so far as the subject has a practical bearing on the diagnosis or treatment of diseases of the brain.

After short chapters on localisation in insanity, and on the information derived from cerebral localisation in general medicine, as epilepsy, fever, and so-called neuroses, the larger subject of cerebral localisation in its relation to surgery is dealt with. Tumours, fractures, abscesses, and hæmorrhages in the various positions in which they occur either within or without the brain itself, are fully considered.

A valuable section is devoted to the question—What are the parts of the brain which can be looked on as accessible to surgical interference? in which it is shown that "absolutely inviolable are only the middle region of the base and its bordering convolutions, the corpora quadrigemina, and pons-oblongata."

The localisation of the motor areas are treated of at considerable length. In most respects the results of Horsley, Schäfer, and Ferrier are confirmed. Good diagrams are given, somewhat more detailed as to subdivisions of the main areas than are those of

Schäfer; and the observations and experiments on which these subdivisions are based are considered in a series of chapters.

On the much more uncertain and difficult subject of sensory localisation we find a great deal of useful information. It is held that the connection of the cuneus and adjacent region with the retina and simple visual sensation is "settled beyond doubt;" and numerous cases are given in support of this view. In undertaking an operation guided by visual localisation, the following rules should be followed:—

"If a patient has lateral homonymous hemianopsia as the special localising symptom, operation should be performed with the view of reaching the cuneus behind the position of the 'parieto-occipital fissure. If, without hemianopsia, the patient fails in intelligent recognition of things and words, the aim should be the lateral occipital convolutions and the angular gyrus, which is adjacent or indeed may be situated in the occipital lobe. When, with lateral homonymous hemianopsia, the patient also has hemianæsthesia, the lesion is probably in the tracts between the cuneus and the primary optic centres, large enough also to involve the sensory tracts. Such a lesion would probably best be reached beneath the position where, on the lateral aspect of the hemisphere, the parietal, occipital, and temporal lobes come together."

Schäfer believes that in the monkey the fibres proceeding to the angular gyrus are not involved in lesions of the occipito-temporal regions. Dr. Mills, however, finds in the human brain that both the angular gyrus and the occipital lobe are so placed with reference to the geniculate bodies and corpora quadrigemina that they are anatomically and morphologically in relation with the radiations proceeding from these bodies to the cortical visual centres.

Irregularities in the arrangement of the fissures and convolutions might sometimes give rise to confusion or difficulty in operations. Dr. Mills notices some cases of this kind, and describes and figures two brains—one of a delusional monomaniac, in which the great extent of the occipital fissure and the arrangement of the neighbouring convolutions gave the brain an ape-like character; the other, that of a Chinese, in which the first temporal fissure, beginning near the anterior extremity of the temporal lobe, passed backwards across the entire extent of the parietal lobe, and over the median edge of the hemisphere for the distance of half an inch, terminating in the precuneus just in front of the parieto-occipital fissure.

A long chapter is devoted to the consideration of the localisation of cutaneous sensibility, but without arriving at very satisfactory conclusions. The existence of a special muscular sense, distinct from other acknowledged forms of sensibility, is doubted. On the whole, the author thinks "the conclusion is warranted that there is a region for general sensation, including touch, pain, temperature, and possibly pressure, and location of a limb, which can be divided into special sub-areas for the various distinct portions of the body, and that these regions lie along side of, and have close anatomical and morphological relations with, corresponding motor areas, but that they are not identical with them. From an anatomical and morphological point of view, and from the facts of physiology and pathology, no part of the brain is more likely to contain these differentiated areas for sensation than the gyrus fornicatus, the hippocampal gyrus, the precuneus, and the postero-parietal convolutions."

Lesions of the prefrontal lobe cause symptoms which are mostly psychical. A good contrast is drawn between these symptoms and those of lesion of the cerebellar hemispheres, which are also sometimes without localising symptoms.

Auditory symptoms are, Schäfer notwithstanding, looked on as pointing to lesion of the temporal convolutions. An operation is suggested by which a tumour growing on the root of the facial and auditory nerve might be reached and removed.

The seat of the senses of smell and of taste is still very doubtful. The former is probably the uncinate gyrus, and the latter in the hippocampal lobule.

The Various Manifestations of the Rheumatic State, as exemplified in Childhood and Early Life. By W. B. CHEADLE, M.D.
London: Smith, Elder, & Co. 1889. Pp. 127.

DR. CHEADLE has produced a readable and instructive book on a very important subject. He starts by showing that whilst a study of rheumatism in the adult points to the connection commonly recognised between rheumatism and arthritis, this is not the case when studying the disease in children; in early life other morbid conditions appear prominently and commonly, and arthritis cannot be looked upon as alone typical, essential, and representative.

Endocarditis, pericarditis, pleurisy, tonsillitis, exudative erythema, chorea, and subcutaneous nodules, are all to be included

in the series of rheumatic phases. The four former are not infrequent accompaniments in adult life; the latter three belong to childhood—subcutaneous nodules being always of rheumatic origin, and chorea and exudative erythema generally so.

In childhood the articular affection has not yet become the chief feature, but is usually slight and subordinate, and indeed is sometimes absent from seizures undoubtedly rheumatic in nature. An important point is, that in childhood the different manifestations tend to arise independently and apart from each other. The author gives some striking series, showing the sequence and intervals of the different appearances. The various manifestations are dealt with in detail, and the work of other investigators receives due notice. There is an excellent coloured plate showing remarkable subcutaneous nodules and erythema marginatum.

Dr. Cheadle's book cannot be read without pleasure and profit.

The Animal Alkaloids, Cadaveric and Vital: or, the Ptomaines and Leucomaines, Chemically, Physiologically, and Pathologically considered in Relation to Scientific Medicine. By A. M. BROWN, M.D.; with an Introduction by Professor ARMAND GAUTIER. 2nd Edition. London: Hirschfeld, Brothers. 1889. Pp. 252.

THE rapid sale of the first edition of this work shows the interest which is taken in the subject with which it deals. As we indicated in our notice of the work, we are of the opinion that a much better book might easily be written on the poisonous matters which are generated in the animal body—better both in matter and in style. These remarks are still applicable to the present enlarged edition. We find in the earlier parts the same inelegancies and obscurities as before. We still meet with our old friend the mass medium which looks as if it had been sweetened, and so on. Throughout, the meaning is constantly obscured in a cloud of words, and the pages are filled with speculations which have little or no basis in facts. We find even articles in the *Journal des Debats* adduced in evidence of theories. All the products of destructive metabolism in the living body seem to be lumped together as leucomains, although there is but little evidence of the alkaloidal nature of many of them. The two concluding sections of the book are, we are told, devoted to entirely new material, which has been brought down to the latest date. Of these, the first gives a sort of *resumé* of the work of Bouchard on the toxicity of the urine, and in the

other is developed a theory that fatigue and sleep are due to poisoning by leucomains which accumulate in the blood during activity and wakefulness.

As a specimen of the appreciative manner in which the author looks on modern scientific medicine, and of his critical judgment, we will conclude by quoting the following passage—if it meets with the sympathy and approval of any of our readers, we would refer them to Dr. Brown's work, where they will find plenty more of the same kind of writing:—

"If the student interested in pathology, and more particularly pathogenesis, may well exclaim, 'where are we now?'—the practitioner of thirty years' experience may safely assure himself that we are pretty much where we were before. The speculative gropings of the period above-mentioned may have added some brilliant pages to the romance of medicine, but very little to our knowledge of disease, and still less to its alleviation or cure."

We fear that Dr. Brown's pages, while certainly wanting in the brilliancy to which he appears to object, will not advance us much further than we have got.

RECENT WORKS ON PHYSIOLOGY.

A Text-book of Physiology. By M. FOSTER, M.A., M.D., F.R.S. Fifth Edition. Part II., comprising Book II.—The Tissues of Chemical Actions, with their respective Mechanisms—Nutrition. London: Macmillan. 1889. Pp. 491.

A Text-book of Physiology. By JOHN GRAY M'KENDRICK, M.D., F.R.S. Including Histology, by PHILIP STÖHR, M.D. Vol. II.—Special Physiology. Glasgow: Maclehose. 1889. Pp. 803.

THESE two works, appearing almost simultaneously and under the same title, form a contribution to physiological literature of which this country may well feel proud. Although they are both text-books of physiology, their scope and plan differ considerably. In Dr. M'Kendrick's work there is much more detail than is to be found in that of Professor Foster. There are very numerous drawings of instruments and apparatus, and the work includes a complete and admirable treatise on histology and histological technique.

Professor Foster's work is chiefly distinguished by its broad philosophical views, the scientific arrangement of the matter, and

the absolutely unsurpassable clearness and elegance of the style in which it is written. Detailed descriptions of instruments are rarely given, and histology, although forming a larger part of the work than was the case in previous editions, is dealt with only so far as seems necessary for the understanding of the physiological processes taking place in the different organs. Under Professor Foster's direction the Cambridge School has come to be one of the first in the world, and the originality and value of the work done in it must be a source of gratification and pride to every Englishman. In the book before us we find incorporated much of this work—the truly epoch-making researches on the nervous system and innervation of the heart, by Dr. Gaskell, one of the most original of living physiologists; the researches of Mr. Langley on the activity of glands; the oncographic observations of Professor Roy; and the studies on respiration by Mr. Head. All these show that the country of Harvey is still able to hold its place among the physiological schools of the world.

In Professor M'Kendrick's work we also find much native matter. We would notice his own admirable researches on the electrical currents in the retina, and the work of Professor Crum Brown on the semi-circular canals of the ear, the latter illustrated by numerous drawings illustrating the methods employed.

On the whole we have to express our opinion that there are not to be found two more excellent text-books of physiology than those before us. The many peculiar merits which each possesses will make both works welcome to all those interested in physiological science, a class which we are fain to believe is a daily increasing one.

On the Pathology and Treatment of Diphtheria. By EMANUEL MAY, M.D. Heidelb.; M.R.C.P. London: J. & A. Churchill 1889. Pp. 16.

On several occasions during the past year paragraphs have appeared in the *London Morning Post*, stating that diphtheria was rife in London, that it was a dangerous disease, and that medical men did not fully understand either its ætiology or treatment. At the appearance of these articles Dr. May felt some natural surprise, as he had written in the *Lancet* three papers on the *successful* treatment of diphtheria, and he then published the pamphlet which we have before us in order to bring his views before a wider circle of readers.

Dr. May commences his treatment by brushing off the deposit with a camel's hair brush dipped in a solution of perchloride of mercury or of chlorinated soda, endeavouring to remove the whole deposit at the first visit. He then gives a mustard emetic to dislodge the micro-organisms from the stomach. Then with two doses of perchloride of mercury and a little castor-oil he "cleanses the entire gastro-enteric canal of these pernicious atoms!"

Few medical men claim to have accomplished such a feat as this. The rest of his treatment is tame in comparison. He gives diaphoretics and diuretics to get rid of the germs that had got into the blood before the gastro-enteric canal was cleansed, and keeps the patient on low diet, avoiding stimulants and tonics. Occasionally iron is required, because "these animalcules lessen the red particles of the blood."

Dr. May has treated over 200 cases of diphtheria in this way with only two deaths, and in both of these cases Dr. May had been called in too late for his treatment to have its wonted effect.

Concerning the pathology of diphtheria we read—but have difficulty in comprehending—the following statement:—"We have reason to believe that micro-organisms are more rife and proliferous in the atmosphere of late, as we find insect life generally is more prolific and pestilential to vegetable life." Does Dr. May think bacteria are insects?

This pamphlet is chiefly interesting as showing, in Dr. May's mind, an unusual degree of belief in the antiseptic power of perchloride of mercury.

TREATMENT OF ERYSIPELAS BY ANTISEPTIC FENCE.

DR. SIEBERT (*New York Med. Journal*, Oct. 19, 1889) gives cases in which he used Riedel and Laurenstein's modification of Kraske's method of treating erysipelas by making a "fence" of incisions in the healthy skin close to the border of the erysipelas. Dr. Siebert used a vaccination harrow, and gave no anæsthetic. The incision crossed and recrossed and drew blood. A solution of corrosive sublimate (1 in 2,000) was then rubbed into the wound. In three cases given the erysipelas failed to cross the fence, although it extended in other directions.

PART III.

SPECIAL REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.*

By WALTER G. SMITH, M.D.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic in Ireland, Trin. Coll. Dubl.

Art. 1. Anthrarobin.	Art. 25. Mercuric chloride.
„ 2. Antipyretics, toxic effects of.	„ 15. Methacetin.
„ 26. Antipyrin.	„ 16. Morphin and Codein.
„ 3. Benzanilide.	„ 17. Myrtol.
„ 4. Chloralformamide.	„ 18. Nitrites.
„ 5. Creolin.	„ 19. Paraldehyde.
„ 7. Exalgin.	„ 20. Phenacetin.
„ 8. Glycerin suppositories.	„ 21. Pyrodin.
„ 9. Hydronaphthol.	„ 22. Saccharin.
„ 10. Hydroxylamin.	„ 23. Sozoiodol.
„ 17. Hyoscin.	„ 24. Sulphonal.
„ 11. Ichthyol.	„ 28. Sulphones.
„ 13. Iodol.	„ 12. Thiol.
„ 6. Menthol.	„ 14. Thio-resorcin.

1. *Anthrarobin*.—This reduction-product of alizarin is less irritant than chrysarobin, and hence seemed worthy of trial. But Rosenthal and Köbner dispute its therapeutic value. Köbner prescribed it for twenty-four psoriatic patients, and found that not only did it cause smarting of the skin, but also its action was so slow and feeble that some patients who knew the efficacy of

* The author of this Report, desirous that no contribution to the subjects of *Materia Medica and Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

chrysarobin requested that it be substituted for the anthrarobin (*Les Nouv. Rem.*, from *Schmidt's Jahrb.*).

2. *Antipyretics—Toxic Effects of.*—(a) *Antipyrin.*—All cases of poisoning by this drug are important, since from its undoubted utility, not only in fever, but also in neuralgias, it has become very popular. Tuzcek has recorded a case in a boy, nine years of age, to whom the drug was given to allay the paroxysms of whooping-cough. The patient had never suffered from convulsions, rickets, or worms. The dose given was about seventeen grains daily in three doses for the space of three weeks. At the end of this period the patient was seized with vomiting, and passed into a state of somnolence, ending in deep sleep. Rapid ensuing epileptiform spasms followed, sometimes general, sometimes unilateral, accompanied with grinding of the teeth and jactitation, arrhythmia of the cardiac beat, and dilatation of the pupils. A macular eruption appeared on the skin, and the temperature became subnormal, while the pulse was slow and tense. On the third day of poisoning, consciousness began to return, the convulsions diminished in severity, and ceased entirely on the fourth day. For a few days the child was depressed, but completely recovered. During the poisoning there were, as might be expected, no attacks of whooping-cough, but afterwards the paroxysms returned with increased severity, and lasted for some months (*Brit. Med. Journ.*, June 29, from *Berl. klin. Woch.*, 17, 1889).

Dr. C. S. Purdon describes a case in which serious nervous symptoms with tremors ensued upon a single 5-grain dose of antipyrin (*Brit. Med. Journ.*).

(b) *Antifebrin.*—In a case of acute tuberculosis in a young man 10 grains of antifebrin induced alarming symptoms. The temperature fell more than 6° Fahr., and the patient became collapsed, and did not fully recover until next morning (*Brit. Med. Journ.*, Sept. 14).

Somewhat similar results occurred in the practice of Dr. Meyer of Hildesheim (*Lancet*, June 8).

3. *Benzanilide* (C_6H_5NH, CO, C_6H_5) is a white crystalline powder, sparingly soluble in water, soluble in alcohol. Kahn has employed this drug in a great number of febrile diseases in children. It is easily taken, and is well borne. As Cahn and Hepp have shown, benzanilide is an energetic antipyretic, acting

similarly to acetanilide The doses are 1 to 2 decigrams ($1\frac{1}{2}$ to 3 grs.) for children under three years of age, up to 9 grs. for older children. The maximal dose in twenty-four hours was 50 grs. Roughly speaking, the dose may be said to be twice that of acetanilide (*Les Nouv. Remèdes*, from *Schmidt's Jahrb.*).

4. *Chloralformamide* (chloralamide).—Such is the title of a new hypnotic prepared by Schering, of Berlin, at the instigation of Prof. v. Mering. It is an addition-product of chloral anhydride (CCl_3CHO) and formamide (CHONH_2), and its formula is

$$\text{CCl}_3\text{CH} \left\{ \begin{array}{l} \text{OH} \\ \text{NHCHO} \end{array} \right.$$

It occurs in colourless crystals, soluble in 9 parts of water and $1\frac{1}{2}$ parts of alcohol (96 per cent.). The flavour is mild, feebly bitter, and not at all caustic.

Experiments on frogs and rabbits attested its hypnotic power, and, comparing it with chloral, the blood-pressure was found to be very slightly affected. Dr. Kny, of Strassburg, has tested the action of chloralformamide on man, having administered it 100 times in 31 cases. The dose varied from $1\frac{1}{2}$ to 4 grams (22 to 62 grs.). Speaking generally, it is suitable to the same class of cases of insomnia as chloral. A larger dose is requisite, in the ratio of 3 to 2, and its action is somewhat slower, sleep coming on in from 20 to 40 minutes after administration—on an average half an hour. The duration of the sleep varies from six to ten hours, and no unpleasant after-consequences are experienced.

Chloralformamide is so unirritating that a 10 per cent. solution causes no irritation when applied inside the eyelid of a rabbit; and it can be taken by patients in a powder directly, or in wine, &c., without risk of offending or disturbing even a sensitive stomach. A good vehicle is sweetened red wine.

The most striking advantage of chloralamide is this—that even in deep narcosis the circulation suffers no embarrassment, either central or peripheral.

Dr. Kny has also experimented with chloralacetamide, but with unfavourable results (*Therap. Monatsh.*, Aug., 1889).

Drs. Hagen and Häfter consider chloralamide to be one of the most reliable hypnotics (*Münch. medic. Wochensch.*).

Hagemann and Strauss carefully noted its action upon fifteen patients suffering from various diseases. They gave it in doses of from 1 to 4 grains, and conclude that it is a good hypnotic, which

does not affect the circulation, and seldom disorders the **stomach**. Sometimes it failed to induce sleep (*Berl. klin. Woch.*, No. 33, 1889.)

5. *Creolin* (*Liquor Antisepticus, Jeyes'*) seems to be gaining favour as an antiseptic and disinfectant. Pleskoff strongly recommends creolin in chronic rhinitis, ozæna, and pharyngitis sicca. He uses a 1 per cent. solution (*Therap. Monatsh.*, Oct., 1888). It is of practical importance to know that the assertion of its absolutely *non-poisonous* qualities is not borne out by further observations. It could, *à priori*, scarcely be expected that a powerful germicide, and one containing phenolic compounds, would be, as was stated, "at the same time harmless to higher forms of life." According to Biel and Fischer, creolin contains naphthalin, pyrocresol, paracresol, xylenol, phlorol, leucolin, anthracene, pyridin bases, aromatic hydrocarbons. Its ash is rich in sodium carbonate. (*Cf.*, a full Report on Creolin by Dr. Lichtwitz, *Nouv. Rem.*, Oct., 1888). It appears to be a complex and variable mixture. Experiments have been made at Königsberg by Washbourn and Baumgarten with the result that creolin is undoubtedly "a strong poison for the animal organism." Behring has arrived at a similar conclusion from his experiments on animals. In acute cases death was preceded by progressive weakness and clonic convulsions; in chronic poisoning, produced by a smaller quantity, albuminuria was observed, and, after death, evidence of chronic nephritis. The poisonous dose is relatively large; hence there is little danger attending its use in dressings (*Brit. Med. Journ.*, Feb. 2, 1889).

Cramer, however, reports a case in point. A boy, aged five, operated on for hernia, was dressed with gauze dipped in a 2 per cent. solution of creolin (Pearson's). Everything went well up to the evening of the third day, when a scarlatiniform rash appeared on body, face, and hands, but with no pyrexia. The urine smelt heavy, was dusky-coloured, like carbolic urine, and contained a little albumen. Boric lotion was substituted, and the patient quickly recovered (*Therap. Monatsh.*, Dec., 1888). Two minor objections have been raised against creolin in surgical practice—viz., its solutions are so opaque as to conceal instruments in a tray filled with it, and it makes the instruments slippery.

J. Van Ackeren records a case in which a man swallowed 250 cm. of undiluted creolin with suicidal intent. He speedily

became comatose, but ultimately recovered (*Berlin. klin. Woch.*, 32, 1889).

6. *Menthol in Neuralgia*.—Menthol has a distinct use in relieving neuralgia of the fifth nerve and other local painful affections. Its action is not, however, very powerful. Its internal administration has been advised by Dana for many painful affections. In doses of five to twenty grains it gives a pleasant feeling of warmth, while it stimulates the cardiac action, without increasing its rapidity, and raises the arterial blood-pressure. But the chief action noticed was that it relieved pain. It was found especially useful in migraine, and in supra-orbital neuralgia, and in the headaches of neurasthenic and anæmic patients. In some cases of sciatica relief was obtained; thus adding another drug to the multitude which may be used, often without effect, in this neurosis (*Brit. Med. Journ.*, June 22, 1887).

7. *Exalgin*.—Under this empirical name, which refers to one of its uses (ἐξ; ἄλγος, pain), MM. Dujardin-Beaumetz and Bardet introduce a derivative of benzine obtained by Brignonnet. Its formula is $C_9H_{11}NO$, and its chemical nature is expressed in the term methyl-acetanilide.

The physiological action of exalgin closely resembles that of antipyrin. While inferior to antipyrin as an antipyretic, it excels it in analgesic power.

In this connection it is interesting to point out that many of the aromatic compounds are at the same time antiseptic, antipyretic, and analgesic in their action. One of these actions, however, usually dominates, and the predominance of a special physiological action seems to bear a relation to the chemical constitution of the compound. Thus *antiseptic* effects belong especially to the hydrates or alcoholic derivatives (phenol, naphthol, &c.).

Antipyretic action prevails in the amide derivatives (kairin, thallin, and their acetyl derivatives—*e.g.*, acetanilide).

Lastly, *analgesic* action is at a maximum whenever in an amide an atom of hydrogen is replaced by a molecule of a fatty hydrocarbon, and especially methyl (antipyrin, exalgin).

The dose of exalgin is 25 to 40 centigrammes (about 4 to 6 grs.) at once; or 40 to 75 centigrammes, taken in divided doses, in the 24 hours.

All forms of neuralgia are relieved by this drug. The effects

were extremely remarkable in neuralgias à frigore; they were much better marked than with antipyrin. In chronic sciatica, muscular rheumatism, and articular maladies, the action was less favourable, as might naturally be expected.

Exalgin is slightly soluble in cold water, but very soluble in water containing a little alcohol; hence it is conveniently prescribed along with a tincture (*Répert. de Pharm.*, Avril, Mai; *Nouveaux Remèdes*, Juin).

8. *Glycerin suppositories*.—As an alternative to glycerin enemata, which have come into considerable favour, Boas has proposed the employment of glycerin suppositories. Kroell (*Therap. Monatsh.*, Nov.), of Hamburg, tested these suppositories in fifty cases, and with thoroughly satisfactory results. They usually act painlessly within from 5 to 15 minutes, and cause one abundant stool. The dose of glycerin for adults is 2 grammes, for children $\frac{1}{2}$ to 1 gramme. The glycerin is contained inside a shell of cacao butter fashioned to the shape of a *chassepot* bullet.

The purgative action of glycerin is exerted on the large intestine; hence the employment of suppositories or enemata of glycerin is especially indicated whenever we wish to stimulate peristalsis of the large bowel.

9. *Hydronaphthol* is a derivative of β -naphthol, a molecule of HO (hydroxyl) being substituted for H. It occurs in white laminar crystals, is sparingly soluble in water (cold, 1 in 1,000; hot, 1 in 300), freely soluble in alcohol, ether, chloroform, glycerin, and the fixed oils. It is non-irritant and non-corrosive, and does not injure instruments. It may be prescribed in ointment or paste (from 5 grains to 3i. per oz.), or as powder mixed with starch, talc, &c., and in solution with glycerin or alcohol. Soluble tablets are also to be had from Seabury and Johnson, as well as soaps (1 and 5 per cent.). Hydronaphthol is an active germicide, but its relative powers are differently estimated by different observers.

Dr. C. Foote, Connecticut, contributes a paper on the value of creolin, hydronaphthol, and sodium fluosilicate as germicides, to the September number of the *Internat. Journ. Med. Scien.*, of which an abstract by Sir C. Cameron appears in the *Dublin Journ. Med. Scien.*, Oct., 1889.

10. *Hydroxylamin*.—The repeated suggestion of hydroxylamin, or oxyammonia ($\text{NH}_2\cdot\text{OH}$), a base in which one atom of hydrogen

of ammonia is replaced by the hydroxyl group, as a possible substitute for pyrogallie acid and chrysarobin in dermatological practice, presenting the advantage of not staining the skin, has led to the publication of some details respecting it for the guidance of pharmacists (*Pharm. Zeit.*, p. 659). The free base, known only in watery solution, is odourless and colourless. The most important salt is the hydrochlorate (NH_2OH , HCl), which occurs in well-formed colourless strongly hygroscopic crystals, freely soluble in water, glycerine, and alcohol. The solutions do not colour phenolphthalein, strongly redden blue litmus paper, but do not cause congo paper to turn blue. In testing for its purity, therefore, the bluing of congo paper would denote contamination with free acid (*Pharm. Journ.*, Dec. 1, 1888). The action of this body has been recently investigated by several experimenters. Raimondi and Bertoni have found that when injected into the blood of living animals (in the proportion of one centigramme to every kilogramme of body-weight in rabbits), it transforms the hæmoglobin into methæmoglobin, and this is confirmed by all subsequent observers. With larger doses than the one mentioned the urine becomes bloody, owing to the destruction of the red corpuscles. In frogs, rabbits, and dogs, hydroxylamin, moreover, causes a general paralysis of the nerve-centres; and in the latter animals it causes convulsions as well. The presence of methæmoglobin has nothing to do with the paralysis; it is still noticed when the narcosis has quite disappeared (*Brit. Med. Journ.*, Nov. 17, 1888).

Binz, upon theoretical grounds, proposed the use of hydroxylamin in the treatment of diseases of the skin, and Eichhoff has experimented with it, and speaks enthusiastically of its virtues as a substitute for chrysarobin (*Monatsh. f. Prakt. Dermat.*).

11. *Ichthyol.*—Within the last year or so a number of communications upon this drug have been published by Russian physicians (Biljeff, Sorokin, Preobrashensky, &c.), who speak in laudatory terms of the value of ichthyol applied externally in erysipelas, in the form of ointment, or lotion, or ichthyol collodion (*Allgem. medicin. Central-Zeit.*).

It is not easy to understand how it is that ichthyol can produce such wonderful effects as are claimed for it. Hoffmann and Lange, after three years' experience, are enthusiastic in its praise, and state they can quite confirm the results obtained by Unna,

Zuelzer, and Nussbaum (*Therap. Monatsh.*, Mai, 1889). Dr. C. McLean also praises it (*Brit. Med. Journ.*, March 9, 1889).

12. *Thiol* is proposed as a cheaper substitute for ichthyol. It is obtained by the action of sulphur on coal-tar oil. Thiol is soluble in a mixture of water, alcohol, and ether. (*Répert. de Pharm.*, Févr.). The Berlin correspondent recommends the following formulary in the *Provincial Medical Journal*, June 1st. Thiol is used for the same disease as ichthyol:—

R. Thiol	...	...	...	3j.
Vaselin.	...	...	...	3j.
Lanolin.	...	...	...	3j.

M. f. ungt.

Sig.: For external use.

R. Thiol sicc.	...	...	...	gr. ij.
Pulv. glycyrrhizæ	...	...	...	gr. ij.
Glycerin. tragacanth.	...	...	...	q. s.

M. f. pilula.

Sig.: One pill to be taken three times a day

R. Thiol sicc.	...	...	...	3j.
Zinc. oxid.	...	...	...	3ij.
Amyli.	...	...	...	3j.
Talc.	...	...	...	3ij.

M. f. pulv.

Sig.: The affected parts to be dusted with this powder.

13. *Iodol*, internal use of.—Dr. Cervesato, of Padua, has administered iodol internally in cases of scrofulosis, respiratory affections, and tertiary syphilis. Its action is in general comparable with that of other preparations of iodine. The urine is sometimes coloured brownish. Iodol does not pass unaltered into the urine, but an increase of the iodides occurs. It is well tolerated, and does not cause iodism. Dose, 1 to 3 grammes daily (*Berl. klin. Wochensch.*, Jan. 14).

14. *Thio-resorcin*.—The latest substitute for iodoform is a combination of sulphur with resorcin, discovered by Ewer and Pick, of Berlin, to which the name of thio-resorcin has been applied. It occurs as a powder, and is without smell, and entirely non-poisonous. It has been used as a dusting powder, and as an ointment made up with vaseline of the strength of from 10 to 20 per cent., for eczema, psoriasis, itch, and other skin diseases. It is

insoluble in water, but sparingly soluble in ether and alcohol. In price it is about the same as iodoform (*Lancet*, June 8).

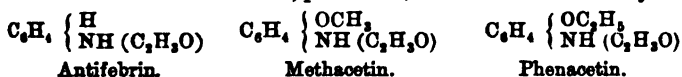
15. *Methacetin*.—This compound, the methyl homologue of phenacetin,* has been examined by Mahnert, of Graz. It is a crystalline powder, slightly reddish, odourless, possessing a weak saline and bitter taste, sparingly soluble in water, readily soluble in alcohol. Hence it appears that it is a more soluble body than phenacetin, with which it agrees in physiological action. It may be given to children to reduce pyrexia, in doses of twenty to thirty centigrammes (*Répert. de Pharm.*, Juin, 1889).

16. *Morphin and Codein*.—Dr. T. R. Fraser, of Edinburgh, has directed his attention to the comparative value of morphin and codeine, and the conclusion he arrives at is that “the evidence seems to indicate that codeine is a less powerful remedy in diabetes than either opium or morphin, and to confirm the view that in its therapeutical value it ranks as a weak or diluted morphin.

“The conclusion receives an importance (no doubt a subsidiary one) from the circumstance that codeine is about three times as expensive a substance as morphine. The great demand for it has led to its being manufactured from morphine so largely that probably one-fourth of the codeine in the market is an artificial substance. When we consider the large doses that are required in diabetes mellitus, and the generally protracted duration of this disease, we are, I think, justified in asking for more clear evidence of its superiority over morphine than has yet been produced” (*Brit. Med. Journ.*, Jan. 19).

17. *Myrtol*.—Dr. H. Eichhorst invites attention to this drug as a most efficient disinfectant for the air-passages. It is a limpid fluid, with an agreeable odour, and constitutes that portion of oil of myrtle (*Myrtus communis*) which boils at 160° to 170° C. Linaix, of Paris, published a monograph upon it in 1878, but it seems to have escaped notice. Eichhorst recommends it most strongly in cases of gangrene of the lung and putrid bronchitis.

*The relations between antifebrin, phenacetin, and methacetin are easily seen:—



i.e., antifebrin is acetanilide; methacetin is oxymethylacetanilide; and phenacetin is oxyethylacetanilide.

sensations. (8) The sleep which it produces is tranquil and quiet, with diminished respirations; this slowing of the respirations in many pulmonary diseases is of distinct advantage. (9) It is not liable to disorder the digestion. (10) In many cases it is generally laxative in its action.

"In only one of the cases in which I prescribed the drug was gastric disturbance noticed. This patient, who suffered from phthisis, complained of a feeling of flatulence, and a disagreeable taste, as of pinewood.

"No loss of appetite followed its use in my cases, nor headache, nor thirst. The dose I found most serviceable for adults was from 45 to 60 minims. My method of prescribing it was to well dilute it with cinnamon water, adding a little syrup of tolu and compound tincture of cardamoms. Syrup of lemon is also an agreeable combination with it" (*Brit. Med. Journ.*, March 9, 1889).

20. *Phenacetin*.—Dr. Dujardin-Beaumetz speaks very highly of it, and states that as an analgesic it outrivals its predecessors, antipyrin and antifebrin. Three phenacetins are known to chemists—viz., meta- para- and ortho-phenacetin. The first of these seems to possess no therapeutic value. "The ortho-phenacetin must be given in larger doses than the para-phenacetin. The medium dose of the latter is from 1.5 grammes to 2 grammes per day. These two salts seem to be devoid of toxic properties. They are powerful antithermics and very active analgesics, which ought to be substituted for antipyrin for the following reasons:— (a) Because they are non-toxic; (b) because they act in doses one-half smaller; (c) because they are one-half cheaper; (d) because, finally, there is no monopoly in their manufacture" (*Brit. Med. Journ.*, March 7, 1889). It is best prescribed in the form of a powder.

21. *Pyrodin* (Hydracetin).—Under this name a new drug has been introduced, which has undoubted temperature-reducing properties of a high order, the practical application of which, however, is much interfered with by its toxic action. Pyrodin contains as its active agent acetylphenylhydrazin ($C_6H_5N_2H_2C_2H_5O$), a crystalline powder very sparingly soluble in water. According to the clinical and experimental observations of Dr. Dreschfeld, of Manchester, which have been confirmed by M. Lépine, of Lyons, pyrodin acts in the same manner as, but more powerfully than,

antipyrin, antifebrin, and phenacetin; and it has also been used effectively in migraine and other forms of neuralgia, as in the lancinating pain occurring in locomotor ataxy (Lépine). Great caution, however, is required in its administration, as it is apt to produce jaundice, followed by anæmia and even more serious symptoms due to hæmoglobinæmia. Milder toxic symptoms have occasionally followed the administration of acetanilid or antifebrin, and also of phenacetin; but as phenylhydrazin is a much more powerful poison than anilin, so also are the toxic properties of its acetyl compound much greater than those of acetanilid. In exceptional cases, and where other antipyretics have failed, it may be useful; but great caution should be used. Small doses only should be given, and at sufficiently long intervals to enable one to watch any toxic effects, with the first appearances of which the drug should be stopped (*Brit. Med. Journ.*, Dec. 29, 1888.)

Pyrodin is a powder, very sparingly soluble in cold water. The dose for children is 3 to 4 grs.; for adults, 8 to 12 grs. Dr. Guttman advises much smaller doses ($1\frac{1}{2}$ grs. at most) for adults (*Berl. klin. Woch.*, 20, 1889).

Dr. Lemoine thinks highly of pyrodin, and especially recommends it in the pyrexia of tuberculosis. With doses of 5 centigrammes the temperature falls within an hour 1° to 2.5° C., and this antipyretic influence lasts for several days. It is also a powerful analgesic. He advises that a maximum of 10 or 15 centigrammes *per diem* be not exceeded, lest toxic symptoms should arise (*Nouv. Remèdes*).

Liebreich points out, according to a recent communication from Dreschfeld, that "pyrodin," so-called, is a mixture of several substances, of which the active compound is acetylphenylhydrazin. Pure acetylphenylhydrazin (hydracetic) is four times stronger than pyrodin, and must be a dangerous substance to meddle with (*Therap. Monatsh.*, Jan., 1889; cf. Oestreicher, *Berl. klin. Wochensh.*, 1889).

22. *Saccharin*.—Saccharin has been the subject of very contradictory statements as to its harmlessness or otherwise, and some of them at least were not free from the taint of personal interest. In view of the growing importance of this question, in consequence of the increasing use of saccharin for sweetening articles of diet, Dr. Thomas Stevenson and Dr. Woolridge have made a series of experiments for the purpose of determining whether this substance

is poisonous when given even in excessive quantities, and whether it interferes with the digestive processes when used in moderation. They report (*Lancet*, Nov. 17, p. 958) on the first point that two grammes were given daily for five days to an underfed dog without any inconvenient results being observed, and that mice ate *ad libitum* food mixed with large quantities of saccharin without manifest influence on the health. In testing whether the antiseptic properties of the compound have the effect of stopping the action of organised ferments, it was found that a 0·1 per cent. solution had no retarding influence on the peptic digestion; that a 0·25 per cent. solution slowed the process decidedly; and that a 1 per cent. solution greatly retarded it. But it is pointed out that a 0·1 per cent. of saccharin is the sweetening equivalent of 30 per cent. of sugar, an impossible dietetic quantity. The diastatic solution of starch was not hindered by 2 per cent. of saccharin. The ammoniacal fermentation of urine was retarded when saccharin was taken or added to the urine after excretion. As experiments like the foregoing do not reproduce exactly the relations which would exist between the two factors in the stomach, experiments were made upon living animals, and it was found by *post-mortem* examination that the ingestion of a gramme of saccharin, equal in sweetening power to over eight ounces of sugar, had not in the least interfered with the digestion of a dog. The authors conclude (1) that saccharin is quite innocuous when taken in quantities largely exceeding what would be taken in any ordinary dietary; and (2) that saccharin does not interfere with or impede the processes of digestion when taken in any practicable quantity. To this they add their personal experience that saccharin may be taken for a considerable period without interfering with the digestive and other bodily functions (*Pharm. Journ.*, Dec. 1, 1888).

Dr. E. Gans has arrived at similar conclusions as to the innocuousness of saccharin upon digestion (*Berl. klin. Wochens.*, April, 1889).

Dr. Attfield has published a pamphlet setting forth the services which saccharin may render to pharmacy, and giving a large number of formulæ, many of them representing pharmacopœial preparations, with saccharin substituted for sugar.

23. *Soziodol*.—This product, manufactured by Trommsdorff, in Erfurt, claims to be an odourless substitute for iodoform. It is an iodine derivative of phenolsulphonic acid, and contains over

50 per cent. of iodine. It is prepared in the form of salts of potassium, sodium, zinc, and mercury. The sodium salt is the most soluble in water (7 to 8 per cent.), and appears to be un-irritating.

A number of competent investigators (Fritsche, Lassar, &c.) have reported as to its efficacy, and it probably deserves a more extended trial in this country, although we are now fairly well supplied with reliable antiseptics and deodorisers. It is unnecessary to particularise its applications to special conditions, and it is sufficient to state that it may be employed as a dusting powder, pure or mixed with talc; in ointments, with lanolin (one in ten); or in solution (2 per cent. and upwards). Sozoidol gauze and cotton may also be had. In the *Therap. Monatsh.*, Sept., 1888, Langgaard gives a full account of the chemistry of soziodol, with experiments which establish its active germicidal powers; and in the same journal, Jan., 1889, Nitschmann speaks highly of its utility in the treatment of wounds, burns, mucous catarrhs, and in gynæcological practice.

24. *Sulphonal*.—Many articles in reference to this drug have appeared during the past year, and the general verdict seems to be in its favour. But, like all drugs of similar action, it has its drawbacks. Engelmann (*Therap. Monatsh.*, Nov., 1888) relates the case of a woman, aged 40, who, while menstruating, took 30 grains of sulphonal for insomnia. Sleep was not induced, and next morning there appeared a sharply-defined scarlatiniform rash on the outside of each mamma. The eruption spread to the forearms, and over the chest to the epigastrium. A good deal of itching attended the eruption, which began to fade away on the third day.

Dr. Schotten (*Therap. Monatsh.*, Dec., 1888) also reports a case in which the exhibition of doses of 30 to 45 grains of sulphonal to a woman, aged 45, was followed by serious prostration and by a measly eruption.

Dr. Hay, of New Jersey ("A Clinical Study of Paraldehyde and Sulphonal," *Internat. Journ. Med. Scien.*, July, 1889), found symptoms of poisoning (vertigo, diarrhœa, depression, &c.) in 18 per cent. of cases treated by sulphonal. He prefers paraldehyde for continuous use, but sulphonal acts satisfactorily in maniacal conditions. In the same journal (March, 1889) Dr. W. H. Flint reports favourably on the use of sulphonal.

A good summary by Dr. Lecch of recent literature upon sulphonal will be found in the *Medical Chronicle*, Nov., 1888.

Dr. Conolly Norman (*Dublin Journ. Med. Scien.*, Jan., 1889) has used sulphonal in about 30 cases of mental disorder, and expresses himself as well satisfied with it. It may be conveniently administered in the form of capsules or in compressed tabloids, 5 grains each. "To sum up the advantages which are claimed for sulphonal:—In doses of 15 to 45 grains it produces a natural sleep, from which the patient awakes refreshed, and without any bad after-effects. It is without smell, and has an almost imperceptible bitter taste. Against the drug are its insolubility and its high price" (*Brit. Med. Journ.*, April 27, 1889).

25. *Action of Tartaric Acid on Mercuric Chloride.*—It was long ago established that corrosive sublimate is a powerful antiseptic, and within recent years its use in surgery has largely increased. The strength of solution employed varies according to the purpose for which it is applied, but in all cases it is highly dilute, sometimes 1 part of chloride in 4,000 of water. The power which mercuric chloride possesses of coagulating albumen has been found to be an objection to its use, particularly in obstetric practice, and to obviate this objection the addition of various substances to the solution has been suggested. Amongst those substances which prevent or diminish the coagulating effect of the mercuric chloride, tartaric acid holds a prominent place, as the addition of that acid to the solution undoubtedly, to a great extent, retards the coagulation. There is, however, an objection to the use of tartaric acid for the purpose mentioned, which does not appear to have been previously pointed out, and to which Mr. Dott thinks it is well worth while to call attention.

When a dilute solution of mercuric chloride and tartaric acid is prepared, a white precipitate slowly makes its appearance, and increases in amount as the solution is allowed to stand. This precipitate is found to be insoluble in water and to blacken on the addition of caustic soda; sufficient evidence that it consists of calomel. It is, of course, not at all surprising that tartaric acid should act as a reducing agent in this instance, as it does in many others; but the fact might readily be passed over, seeing that there is no precipitate on boiling a solution of mercuric chloride and tartaric acid, at least not in a moderate time. Whether in such a solution as that before referred to, the whole of the mercury would ultimately be precipitated as calomel, is a point not determined, but it is evident that there is a risk of the solution being considerably

weakened if it be kept for any length of time (*Pharm. Journ.*, April 20, 1889).

26. Antipyrin Incompatibles.—A short time since M. Carles called attention to a precipitate which is formed upon mixing solutions of antipyrin and extract of cinchona. M. Ollivier, who has been making further experiments, says (*Bull. Comm.*, June, p. 278) that all the active principles are precipitated together, and that there remain in the liquid hardly any perceptible traces of alkaloids or antipyrin. According to M. Carles, however, the precipitate is readily soluble in weak acids, so that it might dissolve in the gastric juice, and the mixture, though unsightly, might not be inert. Another apparent incompatibility has been recorded by M. Blainville (*l. c.*), who having occasion to mix 4 grammes of antipyrin and 5 grammes of chloral hydrate in 15 grammes of water, observed that the mixture assumed a milky appearance, and upon clearing deposited an oleaginous liquid. After decantation this liquid soon crystallised, and then no longer possessed the taste of antipyrin or of chloral, but a flavour rather resembling that of coriander seeds. Attention is called to the inconvenience that may result from the prescribing of complex substances, of which so little is known, together with other chemical substances that may change their physiological action altogether, and it is recommended that as far as possible, when ordering them, simple formulæ, in which only distilled water and a simple flavouring agent enter, should be adopted (*Pharm. Journ.*, July 27, 1889).

27. Hyoscin in Insanity.—Dr. T. Drapes considers that hyoscin, often confounded with its isomer, hyoscyamin, occupies a unique position as regards others of a similar class, namely, that of a safe, certain, and rapid cerebral sedative, unattended in the vast majority of instances by any unpleasant results. It is incomparably superior to the older sedatives, such as morphin and chloral, and none of the newer ones approach it in value as a remedy for controlling paroxysms of furious excitement and turbulent maniacal outbreaks.

As to mode of administration, having tried its effects when given by mouth and found them unsatisfactory, he always gave the drug hypodermically. The particular preparation used was Ferris and Co.'s liq. hyoscin. hydrobrom. The strength of this solution is 1 in 400, but for subdivision of dose it is better to dilute this with an equal quantity of distilled water, 1 drachm of each at a time, as the dilute does not keep as well as the stronger solution; of this

diluted solution, 1 in 800, 5 minims represents $\frac{1}{160}$ grain, a very safe average dose to commence with hypodermically. But this may be rapidly increased to 8 minims ($\frac{1}{10}$ gr.), or more, if found insufficient (*Brit. Med. Journ.*, April 27, 1889).

28. *On the Relations between the Chemical Constitution and Physiological Action of some Sulphones.*—Baumann and Kast have recently published an important and interesting paper upon the above subject.* The discovery of the hypnotic action of sulphonal by Kast suggested the inquiry how far the action of sulphonal agreed with that of similarly-constituted compounds.

The questions that arise are whether, in the sulphones, the action depends upon the sulphur group, or upon the ethyl or upon the methyl groups; also, in disulphones whose methyl groups are replaced by ethyl groups, and *vice versa*, what differences in physiological action occur.

The sulphones investigated were those in which the sulphone groups are combined with one and the same carbon atom. These fall into three different series, represented by the general formulæ:

1. $\text{CH}_2(\text{SO}_2\text{R})_2$ —Methylene disulphones.
2. $\text{CHR}'(\text{SO}_2\text{R})_2$ —Methenyl disulphones.
3. $\text{CR}'\text{R}''(\text{SO}_2\text{R})_2$ —Ketone disulphones.

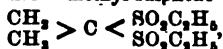
In these formulæ, R, R', R'', designate monad alcohol radicals, which may be identical or different.

The authors have investigated no fewer than fourteen different chemical compounds, and have arrived at some general conclusions of considerable interest.

Those sulphones which pass through the organism unchanged are inactive (diethyl sulphone, the methylene disulphones, and ethylene diethyl sulphone). Yet these compounds are easily broken up outside the body by chemical agency (alkalies, &c.), whereas the methyl disulphones and the ketone disulphones (sulphonal) are very resistant to chemical reagents, but are decomposed in the organism, and the latter group are active hypnotics.

Among the disulphones which are decomposed by metabolism only those are active which contain ethyl groups. The physio-

* A *sulphone* is a combination of the dyad radical SO_2 with an organic radical—e.g., methyl, ethyl, &c. Sulphonal = diethyl sulphone—dimethyl methane,



i.e. = marsh gas, CH_4 , in which two atoms of H are replaced by methyl, and two atoms by ethyl-sulphone.

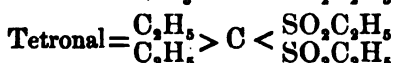
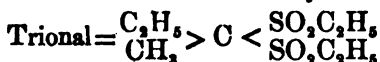
logical action of all the active disulphones is essentially the same in kind; the intensity of action of an individual sulphone is determined by the number of ethyl groups which it contains. Thus, a given dose of a sulphone containing four ethyl groups will produce the same effects upon a dog as a double dose of a sulphone containing two ethyl groups.

The group SO_2 does not *as such* affect the action of the disulphones.

Ordinary sulphonol $(\text{CH}_3)_2\text{C}(\text{SO}_2\text{C}_2\text{H}_5)_2$ acts in just the same way as "inverted" sulphonol $(\text{C}_2\text{H}_5)_2\text{C}(\text{SO}_2\text{CH}_3)_2$. The sulphone with four methyl groups $(\text{CH}_3)_4\text{C}(\text{SO}_2\text{CH}_3)_2$ is almost quite inert. Hence, for the first time, it is shown that a definite pharmacological significance attaches to the ethyl group in a certain combination which does not, under similar conditions, belong to the methyl group.

Hence, also, it should follow that sulphones which contain a larger number of ethyl groups than ordinary sulphonol would prove proportionately more active.

This actually appears to be the case from observations made upon *trional* and *tetronal*, whereby are signified sulphones containing respectively three and four molecules of ethyl:—



Further clinical experiments upon these bodies are promised.

In connection with the relationships just mentioned it is worth while to note the inactivity of trimethylcarbinol $(\text{CH}_3)_3\text{COH}$, as compared with the hypnotic action of dimethylethylcarbinol (amylene hydrate) $(\text{CH}_3)_2\text{C}_2\text{H}_5\text{COH}$, discovered by von Mering (*Zeitsch. f. phys. Chem.* XIV., p. 52).

TREATMENT OF SCABIES.

DR. THERWELL (*New York Med. Journal*, Oct. 19, 1889) treats scabies by giving dry precipitated sulphur to the patient, and directing him to rub it fairly well, but not violently, into the parts of the person where the disease is manifest, once a day, preferably on retiring. About a teaspoonful of the same powder should be sprinkled in the bed. A hot bath and change of underclothing and bedclothes two or three times a week completes the treatment.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF OBSTETRICS.

President—S. R. MASON, M.B., F.R.C.S.I.

Sectional Secretary—ANDREW J. HORNE, F.K.Q.C.P.

Friday, November 22, 1889.

The PRESIDENT in the Chair.

Exhibitions.

1. *Perimetritis.*

DR. W. J. SMYLY exhibited two ovaries and tubes which he removed from a woman who was subject to perimetritis. The right ovary was very much enlarged, and was very easily felt; and the tube on that side was thickened. The uterus itself was retroverted and adherent. As he drew out the right ovary a cyst burst. This had been microscopically examined by Dr. White, who was of opinion that it was a dermoid cyst. For a long time he was unable to find the other ovary; but at length he came down upon the mass now produced and shelled the ovary out of it. The patient had made a rapid recovery. The cystitis, however, was not cured and he was treating her for it. It was the worst case of perimetritis he had ever met with.

2. *Suppurating Ovary.*

DR. SMYLY exhibited another specimen consisting of a suppurating ovary. The nature of the tumour was at no time very clear, and an exact diagnosis was impossible. When he first saw her she was very weak and in a sinking condition. The tumour had been for some months

discharging pus through the bladder and rectum; and she also passed large quantities of blood clots through the rectum. He determined to drain the cyst, as removing it was out of the question. The only course open to him was to open the abdomen and stitch the opening of the cyst to the abdominal wall, to which it was adherent. The next day he performed laparotomy. The omentum was adherent to the front of the bladder and to the tumour, so that he could not draw the latter upwards. He therefore tied the omentum in two parts and divided it. Still it was firmly adherent to the front of the tumour, and when he proceeded to separate them pus began to ooze from the tumour. He then put one of Lawson Tait's small trochars into the tumour, but nothing came from it. He put his finger into the hole from which pus was coming and discovered a tunnel leading into the rectum and another towards the bladder. The structure of the tumour was peculiar, the part of the cyst which he first came upon being formed of lymph. He stitched the hole he had made in the abdominal wall and put in a drainage tube. The woman was not relieved by the operation, and died next day. He believed the cyst to be a suppurating ovary, not so much from its character as because, on the *post mortem*, Dr. Bagot failed to find the second ovary.

3. Fibro-myoma of the Uterus.

MR. O'CALLAGHAN exhibited a fibro-myoma which he removed ten days previously from the left side of the uterus of a single woman aged forty. Before the operation it was thought to be a solid ovarian tumour. It had an œdematous pedicle very close to the uterus, but not attached to it. The woman showed no bad symptoms afterwards, and was now nearly convalescent.

4. Small Ovarian Tumour.

MR. O'CALLAGHAN also exhibited a small ovarian tumour. If these tumours were left without being operated on the result was that tubercular disease developed, with peritonitis; and in the present case there was a large encysted peritonitis with the tumour lying at the bottom of it.

5. Enlarged and Cystic Ovaries.

DR. M'MORDIE exhibited enlarged and cystic ovaries removed for pain and hæmorrhage. Patient, aged thirty-six, had large fibroid uterus cavity measuring $6\frac{1}{2}$ inches; suffered from profuse menstruation, which had become constant, and very severe pelvic pain. An attempt to enucleate the fibroid after dilating the uterus was abandoned as hopeless. Hæmorrhage still continuing, abdominal section was performed. Both ovaries found diseased—the right one as large as an orange and adherent. Both ovaries were removed, as the pain was thought to be ovarian, and removal would not only cure that but stop the hæmorrhage. Termination of the

case not satisfactory. A low form of peritonitis set in, and she died on the 5th day. She had been very intemperate. Query—Did the disease of the ovaries precede or follow the development of the fibroids?

6. *Tuberculosis of the Ovary.*

DR. WILLIAM BAGOT exhibited a small ovarian tumour of a tubercular character, which he had removed from a woman in the Rotunda Hospital.

7. *Decidua in ruptured Ectopic Gestation.*

DR. BAGOT also exhibited decidua from a case of ruptured ectopic gestation. The tumour is getting smaller, and the patient appears to be getting well.

8. *Small Ovarian Tumour.*

DR. A. J. SMITH showed a small ovarian tumour which he removed from a woman in the Rotunda Hospital. The woman was making a good recovery.

The President's Address.

THE PRESIDENT then delivered the Inaugural Address, in which he reviewed the work done by this Section of the Academy during the previous Session, and alluded, *seriatim*, to a great number of the advances that had been made in this branch of the profession since his student days.

Effects of the Electric Current when applied to the Female Pelvic Organs.

DR. M'MORDIE read a paper on the "Effects of the Electric Current when applied to the Female Pelvic Organs—a few Experiments." The facts adduced and proved by Apostoli and others are very few, and Dr. M'Mordie thinks that any ascertained effect of the electric current passing through any organ, either in physical change or physiological action, is worthy of being recorded. He made a series of experiments as to the effect produced by the continuous current from a one-celled battery on uterine hæmorrhage—one pole attached to a uterine sound in the uterus, and the other to a flat conducting surface placed over the fundus. When a current passed from ten to twenty minutes, two effects were produced—os externum, if small, dilated, and in a large proportion of the cases where the females were healthy the sexual orgasm was produced; it had no effect on the hæmorrhage. Dr. M'Mordie thinks that the electric current has got credit for helping the extrusion of fibroids, whereas he believes it only to have been a coincidence; and mentioned the case of a lady who was sent to him who had a tumour for two years, which might easily have been mistaken for a fibroid, but turned out to be an accumulation of fæces. Had electricity been used it might have gained the credit of dissipating the tumour.

DR. DOYLE said he had a case under his care of an unmarried lady who suffered from severe hæmorrhages. He sent her to Dr. Playfair, of London, who applied Apostoli's treatment, with a current of from thirty to forty milliampères in strength, and the result was to cause a cessation of the hæmorrhages and to enable the patient to gain strength which enabled him to operate on the tumour.

DR. W. J. SMYLY said they had to regard electrical treatment from three points of view. First, had it been more successful than the other modes of treatment previously in use; secondly, was it safer than they were; and, thirdly, was it a simple or a complicated process. So far as he had read the mortality in electrical treatment had been greater than in the other methods. Even Dr. Playfair was not able to adduce at the last meeting of the British Medical Association a single successful case. As regarded the third point, electrical treatment was very complicated, involved an expensive apparatus, and further, required a special education in electricity.

MR. O'CALLAGHAN said cases were mentioned at Leeds in which hæmorrhage was stopped by the electrical treatment, but when the treatment was stopped the hæmorrhage came on again.

The PRESIDENT said that in estimating the value of treatment by electricity it should be borne in mind that there were two classes of tumours to be considered. First, there was intra-uterine myoma, which could be curetted and treated otherwise by surgical means. But there was another class of fibroids which were not so amenable to treatment—viz., large, solid fibroids, grown to such an extent as to press on the viscera and bladder. In cases of that kind any operation was exceedingly dangerous. He held that by the use of electricity for some time the bulk of such tumours could be considerably diminished.

DR. M'MORDIE, in reply, said it would require the experience of years to form a sound opinion as to the value of Apostoli's treatment.

Notes and Remarks on a Case of Complete Prolapse of the Cervical Zone of the Uterus Preceding Labour at Full Term.

DR. F. W. KIDD read a paper entitled "Notes and Remarks on a Case of Complete Prolapse of the Cervical Zone of the Uterus Preceding Labour at Full Term." [It will be found at page 1.]

The discussion was postponed until the next meeting.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1889-90.

Inaugural Address by the President, DR. ANDREW M'CONNELL.

GENTLEMEN,—In assuming the position to which your kindness has promoted me, it would only be false modesty if I did not confess that your unexpected action was a pleasing surprise. I was gratified to find that my daily outgoings and ingoings for twenty years and more, I must confess, mainly attending to my own business, had received such an unexpected mark of your recognition and favour.

The life of a general practitioner, when pursued, as it requires to be, with all due diligence, leaves little leisure for social or public enjoyments. Prompt to every call, he is expected to watch and wait, and if not pray, at least to help and feel for all. And though I believe “More things are wrought by prayer than this world dreams of,” still our department is action. Others may have their say, but ours is to do the deed—to relieve suffering and save life is pre-eminently our duty, and I have often thought that the words—

“Oh, God! Lord William dost thou think
How dreadful 'tis to die—
To stretch the powerless arms in vain—
In vain for help to cry”—

come fearfully home to us. How often, when the yearning face of the hopeless invalid is turned towards us, and the feeble hands press ours for the last time as we turn humbled aside, might these words recur to our memory. It is no wonder we are willing to try to the uttermost, and even after utter failure to try, try, try again to lessen the sufferings of this life, until preventable disease be banished from our shores, and these islands be verily made the Isles of the Blest. In place of weak, puling humanity feebly crawling by the house-sides, pressed down by avoidable causes—foul air, foul food, foul thoughts, and foul deeds—chilled by damp houses, maddened by strong drink, and poisoned by its own excrements—if only things were done, as is known they should

be done—the dream of the philanthropist would surely come, and that quickly, and our loved land be filled with “placid-eyed, deep-breathed, strong-limbed, and happy-hearted human beings.” This happy state is what we all aim at, what we daily and hourly teach, and what is so little attended to in so many—very many—human relationships.

We may be guarded from rabies; small-pox has been robbed of its terrors to most; typhus is understood, and seems to have lost much of its virulence; drunkenness is the theme of every tongue, and is loudly denounced on every side. I look on its decay as certain, but there is yet a pestilence that walketh in darkness, whose ways the world knoweth not, whose name must not be breathed in ears polite, whose existence is earnestly striven to be ignored by many good men, and still more by many good and pure women, and yet it is gnawing the vitals of our prosperity, entailing life-long misery on many who never suspect the cause, preparing for wretched lives and early deaths multitudes of our city population, arresting in mid-career by a single false step many a promising life and blighting—oh! so painfully—the young life just started on the world’s journey, all unconscious of the cause, all innocent of offence, and whose dreadful future of decrepit infancy, senile childhood, deformed, unlovely, and repulsive youth and early decay, no eye but the eye of our profession has yet been opened to see. Surely, surely, the time has come when the presence of this foul blot in our social life should be openly acknowledged, boldly exposed, and sternly exorcised. Here is something waiting for extermination by those who must be content to labour under obloquy, for as yet merely to breathe the name is shame. I have had for many years a wide field for observation of the effects of drunkenness and the effects of impurity, and am compelled to say that the latter cause of disease has many more victims than the former, and the results in every way are more deplorable.

I believe it is our duty to be pioneers in a crusade against this dreadful evil. We have too long spoken with bated breath, while the enemy has entered the heart of the citadel. If “whatsoever a man soweth that shall he also reap” be true of an individual, it is much more true of a community. If by wilful blindness this evil remains unchecked, we must be content to reap the reward which will too surely follow.

A short summary of the work done in the Union Hospital and Infirmary may be of interest. In the year ending October 19th, 1889, there were *admitted* for treatment nearly 8,000 cases. Of these about 600 were fever or allied ailments—as scarlatina, measles, &c.; 350 phthisis, 400 accidents, 400 midwifery cases, 400 Lock cases, and about 100 cases of *delirium tremens*, with 300 admissions into the lunatic wards.

I will now mention a few of the more troublesome diseases which come under my own immediate care, and do not occur in private practice

to any great extent, mainly in the order in which my attention to them is daily turned, dwelling more particularly on two ailments which could be almost, if not entirely abolished, namely, *Lock cases* and *delirium tremens*.

I have always cases of cancer in my wards; they arrive in the stage of deep ulceration, or enormous fungoid growths, and my business is simply to nourish the patient, allay pain, and enforce cleanliness. When there is dysphagia, or total inability to swallow, nutrient enemata are systematically administered, and life is no doubt prolonged. Opium, hyoscyamus, bromides, and hypodermic injections, are resorted to to allay suffering. Cleanliness is attained by syringing with carbolic lotion, removing by lint, absorbent wool, or wood wool wadding, everything that can be removed; then mostly dusting thickly with iodoform, and covering with wood wool wadding; and I can say that every case is kept from being either disgusting or offensive in any intolerable degree. In these cases of cancer I speak only of those in a hopeless stage.

Next to cancer urinary disorders claim a large share of attention, and more time from the surgeon. Urinary fistulæ, stricture, enlarged prostate, and chronic cystitis—these are cases that have passed through many hands, but still a large proportion is much benefited, and many patients are able to resume their ordinary occupations. As a rule, in my cases of urinary fistulæ the constitution is thoroughly shattered, frequently strumous, and only alleviation of symptoms can be procured by making the natural passage as complete as possible—rest, position, unceasing attention to cleanliness, with improvement of general health. It is a very bad case indeed, unless complicated with phthisis, that does not recover tolerably.

Uncomplicated stricture does surprisingly well. Time is no object with us, and the patient is pretty sure to do well. I have hitherto used only dilatation, and am careful that every patient has his own bougie or catheter, so that no contagion can be given or received. Simple dilatation is the usual method, and many patients come back for repetition of the process, and seem to prefer it to any other to which they may have been subjected.

Enlarged prostate and chronic cystitis go together, and it is very rare indeed that a catheter cannot be introduced with perseverance, and then if not cured ultimately, you have the satisfaction of at least giving great relief to suffering. The gum elastic catheter is my favourite, and with patience and judicious curving, it almost always succeeds. In washing out the bladder I use a gum elastic catheter, from which the ring of bone or ivory is removed, and fitted with three or four inches of india-rubber tubing. Thompson's gutta-percha elastic syringe with stop-cock is used, and is very convenient in preventing the introduction of air, and the operation is performed with scarce any disturbance to the patient. I have no doubt that great benefit follows this line of treatment, but as I

have never used it alone without medicinal aid, I cannot say how much improvement is due to washing out of itself.

The next class of cases in which I think you will take an interest, are those unfortunates in which everything runs to pus. Cold abscesses everywhere—neck, axilla, dorsal, lumbar, inguinal, &c., &c. They are emaciated, anæmic, clammy, distressed, fretful and miserable beyond description. Many have large, shallow, open sores, burrowing long distances beneath the skin, and the state of filth and vermin in which too many are admitted is indescribable. Here, again, if life be of any value to such sufferers, the Infirmary usually adds many months, and frequently years, to their term. I do not poultice here. Wash out with some lotion—iodoform, iodoform gauze, carbolic gauze, wood wool wadding, are invaluable. Incisions by degrees to the sound skin, and anything you like in the shape of good feeding—mutton, milk, eggs, wine, or whisky—they can usually eat wonderfully well and stand a deal of high living. So far as I know all that can be done is done, and we have at least that satisfaction. We are able to keep them perfectly clean, prolong life, and alleviate suffering, I think, to a very creditable extent.

We have always a large number of ulcers under our care, varying from the slightest possible to horrid gulfs in the flesh of the leg, 15 by 9 inches, &c., deep, dirty, offensive, and revolting. Time, rest, cleanliness, diet, and tonics will cure almost all of these. It is only a very rare ulcer that is malignant in its nature, and I believe the cure of such an one remains still to be discovered. Where the ulcerated surface is very large the healing process is much hastened by skin-grafting, which is frequently performed, and with good results. The difficulty is not at all in healing the ulcer, but in keeping it healed. If the ulcer has been anything severe, I am in the habit of insisting on a prolonged rest in bed, for the purpose of giving stability to the new tissue. I am satisfied with the results, and some of my patients are much more than satisfied, as rapid healing in early winter is about the last thing they desire.

Ulcers of a specific origin require specific treatment, if you wish to cure them in any reasonable time, and I have often noticed that when, what I considered an ordinary ulcer was more than usually slow in responding to ordinary treatment, it would awaken from its slumber at once when brought in contact with blue pill for a week or so. Many of these specific ulcers will, no doubt, get well in time under ordinary treatment, but it is useless to lose so much time, and the amazing progress they make under syphilitic treatment should convince the most sceptical, both as regards the nature of the disease and its cure.

I now come in my daily course to the Lock wards. There is rarely a case admitted suffering from the regular Hunterian primary sore. The class of individuals supplying the Lock is too callous and indifferent to

trouble for a trifle. Again, cases of gonorrhœa alone rarely seek admission. Our typical case combines gonorrhœa, eczema, condyloma, sore throat, and syphilitic rash on skin, with all the embellishments which dirt, neglect, and degradation can supply. The style of treatment for such a case is usually as follows—sulphur baths, frequent alum vaginal injections. The eczema is treated with lead lotion for a few days, the condyloma dried and dusted with powdered nitrate of lead to begin with, the throat gargled with chlorate of potass frequently, and the patient put on 5-gr. blue pill twice daily, and 1-gr. opium at night. As a rule, in a week you would scarcely know the individual, so much improvement has taken place.

There is then frequently a demand to be discharged, which you cannot resist. The patient goes out, and comes in in a couple of months in the same state of dirt, disease, and despair, only intensified. More and more broken down after each round, heedless of warning, reckless of consequences, the same sad routine is continued for years, until at last, worn out by drink and disease, life is ended in what should be the midst of days. This is the course of a large number who enter our Lock wards. These people never submit to any continuous treatment—as soon as relief is obtained off they go and the disease practically left unchecked, with results—whether traceable or not—that must be deplorable to the health and life of their associates. I do not at present enter into detail of special cases, as I merely wish to give you a glance at what is actually daily occurring in the midst of this vast and thriving community. The true cure I conceive is for every individual, from childhood upwards, to “cease to do evil and learn to do well;” but in the absence of a perfect cure half a cure, such as restraint until danger of contagion passes away, is surely attainable.

It is impossible, however, not to sympathise deeply with their miserable position. Generally ruined when mere children, diseased, drunken, beaten, abused in every conceivable way, uncontrolled and savage of temper, they spend their lives hating and being hated, cursing and being cursed, poisoning and being poisoned.

The revenge they exact in return for their degradation is deep and lasting—the very antithesis, in every respect, to what they intended in the beginning of their lives.

They could brook no delay in the enjoyment of the passions. The pleasures of the moment must be seized, and amusement and enjoyment must be the business of life, with the deplorable results we see, until—

“Twixt want and scorn they walk forlorn,
And nothing can avail;
For the sin forgiven by Christ in Heaven
By man is cursed alway!”

We can all moralise on this sad state of matters, but the cure is

exceedingly difficult. I will only say that "Prudent, cautious, self-control is wisdom's root."

Delirium Tremens is the next ailment my daily duty calls on me to attend, and if my pen were in any way equal to my experience,

"I could a tale unfold
Would harrow up your souls,"

and cause the very stones to rise in mutiny against the criminal negligence of our laws, which puts forth no hand to save our loved ones from the grave, but places at every corner a stone of stumbling and a rock of offence which the ordinary individual can as little avoid as the moth the glare of the candle. "A burnt child dreads the fire" does not hold here, for after every scorching the poor deluded victim returns the sooner to quench his thirst with that fiery liquid which has lured to a drunkard's grave alike the brightest of our race, the loveliest of our kindred, the kindest of our friends, as well as many, very, very many, who were neither bright, lovely, nor kind, but smitten by the destroyer in youth's first blush. I need not paint a death-bed scene, but I must say that even the horrors of mania cannot equal the terrors that possess the stricken soul in *delirium tremens*, and that we are tempted to say—

"A deeper woe,
Oh, I defy thee, Hell, to show
On beds of fire that burn below!

I draw special attention to these two diseases from the fact that they are preventable. Nothing but self-control is required to stand clear of both. Self-control, or any other kind of control, is not the fashion at present—the very children have risen up against it. We want to make life gay—mostly play—and as surely as we do so, just so surely do we fail of our object. In these lands, at least, we cannot live without labour; we must be striving to overcome, and here are two diseases worthy the prowess of either ancient or modern knight-errant. Claiming their victims by the thousand, the man-eating tiger is nothing to them. Short hours and the Sugar Bill are nowhere in comparison; in my estimation even Home Rule may hide its diminished head compared with the surpassing importance attaching to wise legislation on these two subjects.

In after-life we never regret the discipline of youth; we bless the wise restraint put upon our too eager desires, or the sterner coercion which prohibited many things we then thought harmless. In these two matters

"We have been far too unfortunately free,
In them we surely don't want liberty."

Training is what our youth wants; abstaining is what our youth

wants. Byron's lines are applicable far wider than he dreamt of when describing the life of his class:—

“ He knows not youth, it is anticipated ;
His vigour in a thousand arms is dissipated ;
And having drank, gamed, and whored,
The family vault contains another lord.”

These two evils, as well as all other evils to which flesh is heir, it is ours to combat and to cure, if cure there may be; and I have no doubt, however we may differ in many things of intense interest and importance, we all join in increasing affection to that art

“ Whose glory is to give
The crowning boon that makes it life to live.
Wherever, moistening the ungrateful soil,
The tear of suffering tracks the path of toil,
There, in the anguish of his fevered hours,
Her gracious finger points to healing flowers ;
Where the lost felon steals away to die,
Her soft hand waves before his closing eye ;
Where hunted misery finds his darkest lair,
The midnight taper shows her kneeling there.”

CONTRIBUTIONS TO BACTERIOLOGICAL METHODS.

DR. CARL GÜNTHER proposes, in order to make permanent preparations of colonies grown on Agar plates, the following simple method:—The part to be preserved is surrounded by incisions, lifted with the spatula, and placed on a slide in a drop of glycerine. Enough glycerine is added to fill the space between the slide and cover-glass, which is then applied and cemented in the usual way. Such preparations are permanent, can be examined with high or low powers, and photographed. To make cultures on potato in test-tubes, he takes a clean, unsterilised test-tube, places in this a piece of glass tubing 1 cm. long and 7 mm. in external diameter, whose ends have been rounded in a gas-flame. On this he supports a piece of raw potato, of a wedge-shape. This is made by cutting a cylinder with a cork borer, and dividing it diagonally. The test-tube is then plugged with wool, and sterilised by exposure in the steam steriliser for 45 minutes on the first day, and for 15 to 20 minutes on the two following days. The piece of potato, supported on the glass tube, is prevented from coming in contact with the water which condenses and runs to the bottom of the tube.—*Deutsche Medicinische Wochenschrift*. 1889. No. 20.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ; F.K.Q.C.P. ;
F. R. Met. Soc. ; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, November 30, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.		Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.
Armagh -	15.5	25.8	10.3	20.7	Limerick -	25.6	27.0	21.6	25.6
Belfast -	24.3	27.5	29.5	27.7	Lisburn -	33.8	19.3	19.3	19.3
Cork -	22.1	25.3	22.7	22.7	Londonderry	42.8	23.2	25.0	30.3
Drogheda	21.1	12.7	25.4	21.1	Lurgan -	20.5	15.4	41.0	15.4
Dublin -	24.1	26.1	23.5	27.6	Newry -	31.6	17.6	14.0	10.5
Dundalk -	26.2	4.4	26.2	26.2	Sligo -	9.6	19.2	14.4	33.7
Galway -	10.1	20.2	23.5	26.9	Waterford -	9.3	9.3	20.8	16.2
Kilkenny	21.1	8.5	4.2	50.7	Wexford -	25.7	12.8	8.6	25.7

In the week ending Saturday, November 9, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 16.2), was equal to an average annual death-rate of 18.1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19.8 per 1,000. In Glasgow the rate was 24.1, and in Edinburgh it was 16.9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 23.9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3.0 per 1,000, the rates varying from 0.0 in nine of the districts to 10.7 in Londonderry. The 24 deaths from all causes registered in the last-named district comprise 1 from

scarlatina, 4 from whooping-cough, and 1 from enteric fever. Among the 107 deaths from all causes registered in Belfast are 2 from measles, 1 from scarlatina, 1 from whooping-cough, 1 from simple continued fever, 10 from enteric fever, and 3 from diarrhoea. Among the 19 deaths in Limerick are 4 from scarlatina. The 7 deaths in Lisburn comprise 1 from enteric fever and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 157—77 boys and 80 girls; and the deaths to 166—80 males and 86 females.

The deaths, which are 21 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 24·5 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 24·1 per 1,000. During the first forty-five weeks of the current year the death-rate averaged 25·3, and was 3·3 under the mean rate in the corresponding period of the ten years 1879–88.

The number of deaths from zymotic diseases registered is 25, being 3 under the average for the corresponding week of the last ten years and one under the number for the week ended November 2. The 25 deaths comprise 1 from measles, 2 from whooping-cough, 1 from diphtheria, 13 from enteric fever, 1 from diarrhoea, 1 from dysentery, &c.

Thirty cases of enteric fever were admitted to hospital during the week, being 3 over the admissions for the preceding week, and equal to the number for the week ended October 26. Seventeen enteric fever patients were discharged, 3 died, and 131 remained under treatment on Saturday, being 10 over the number in hospital at the close of the preceding week.

The number of admissions of measles cases, which had risen from 5 for the week ended October 26 to 19 for the following week, fell this week to 11. Thirteen patients recovered from measles were discharged during the week, and 20 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, November 2.

No case of typhus and only 1 of scarlatina was admitted. There were but 6 cases of the former and 5 of the latter disease in hospital on Saturday.

Forty-two deaths from diseases of the respiratory system were registered, being 2 in excess of the average for the corresponding week of the last ten years, and also 2 over the number for the week ended November 2. They comprise 31 from bronchitis, 3 from pneumonia or inflammation of the lungs, and 4 from croup.

In the week ending Saturday, November 16, the mortality in twenty-eight large English towns, including London (in which the rate was

17.4), was equal to an average annual death-rate of 18.3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19.9 per 1,000. In Glasgow the rate was 22.8, and in Edinburgh it was 20.7.

The average annual death-rate in the sixteen principal town districts of Ireland was 24.5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2.1 per 1,000, the rates varying from 0.0 in eleven of the districts to 7.1 in Londonderry—the 13 deaths from all causes registered in that district comprising 4 from whooping-cough. Among the 121 deaths from all causes registered in Belfast are 6 from measles, 1 from whooping-cough, 5 from enteric fever, and 2 from diarrhoea. The 20 deaths in Limerick comprise 2 from scarlatina and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 198—111 boys and 87 girls; and the deaths to 178—85 males and 93 females.

The deaths, which are 6 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 26.3 in every 1,000 of the estimated population. Omitting one death of a person admitted into a public institution from a locality outside the district, the rate was 26.1 per 1,000. During the first forty-six weeks of the current year the death-rate averaged 25.3, and was 3.3 under the mean rate in the corresponding period of the ten years 1879-88.

Only 18 deaths from zymotic diseases were registered, being 7 below the average for the corresponding week of the last ten years, and also 7 under the number for the week ended November 9. They comprise 2 from measles, 1 from scarlet fever (scarlatina), 2 from whooping-cough, 7 from enteric fever (being 6 under the number from that disease in the preceding week), 2 from diarrhoea, &c.

Thirty-nine cases of enteric fever were admitted to hospital, being 9 in excess of the admissions for the preceding week. Twenty-eight enteric fever patients were discharged, 2 died, and 140 remained under treatment on Saturday, being 9 over the number in hospital at the close of the preceding week.

Eighteen cases of measles were admitted to hospital against 11 for the preceding week, and 19 for the week ended November 2. Fourteen patients were discharged, and 24 remained under treatment on Saturday, being 4 over the number in hospital on Saturday, November 9.

The hospital admissions for the week include also 3 cases of typhus and 2 of scarlatina: 6 cases of the former and 5 of the latter disease remained under treatment in hospital on Saturday, being equal to the respective numbers at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered

is 31, being 11 under the average for the corresponding week of the last ten years, and also 11 under the number for the week ended November 9. The 31 deaths comprise 21 from bronchitis, 5 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, November 23, the mortality in twenty-eight large English towns, including London (in which the rate was 16.6), was equal to an average annual death-rate of 18.2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20.6 per 1,000. In Glasgow the rate was 23.9, and in Edinburgh it was 20.3.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 24.2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1.9 per 1,000, the rates varying from 0.0 in ten of the districts to 5.2 in Armagh—the 2 deaths from all causes registered in that district comprising 1 from diphtheria. Among the 130 deaths from all causes registered in Belfast are 8 from measles, 2 from typhus, 1 from simple continued fever, 3 from enteric fever, and 5 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 161—85 boys and 76 girls; and the deaths to 164—90 males and 74 females.

The deaths, which are 41 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 24.2 in every 1,000 of the estimated population. Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 23.5 per 1,000. During the first forty-seven weeks of the current year the death-rate averaged 25.3, and was 3.4 under the mean rate in the corresponding period of the ten years 1879–88.

Only 13 deaths from zymotic diseases were registered, being 17 below the average for the corresponding week of the last ten years, and 5 under the low number for the week ended November 16. They comprise 2 from whooping-cough, 6 from enteric fever (being 1 under the number from that disease in the preceding week, and 7 under the number for the week ended November 9), 1 from diarrhoea, 1 from erysipelas, &c.

The number of cases of enteric fever admitted to hospital during the week is 23, being a decrease of 16 as compared with the admissions for the preceding week. Twenty-seven enteric fever patients were discharged, 5 died, and 131 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week.

Only 6 cases of measles were admitted to hospital, against 18 for the preceding week: 11 patients convalescent from measles were discharged,

2 died, and 17 remained under treatment on Saturday, being 7 under the number on Saturday, November 16.

The hospital admissions for the week include also 8 cases of scarlatina and 2 of typhus: 8 cases of the former and 7 of the latter disease remained under treatment in hospital on Saturday.

Thirty-three deaths from diseases of the respiratory system were registered, being 2 over the number for the preceding week, but 14 under the average for the forty-seventh week of the last ten years. They comprise 23 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 30, the mortality in twenty-eight large English towns, including London (in which the rate was 16·7), was equal to an average annual death-rate of 19·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·0 per 1,000. In Glasgow the rate was 22·5, and in Edinburgh it was 22·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·6 per 1,000, the rates varying from 0·0 in eleven of the districts to 12·7 in Kilkenny—the 12 deaths from all causes registered in that district comprising 2 from typhus and 1 from diarrhoea. Among the 122 deaths from all causes registered in Belfast are 10 from measles, 4 from scarlatina, 1 from typhus, 2 from whooping-cough, 1 from diphtheria, 7 from enteric fever, and 2 from diarrhoea. The 35 deaths in Cork comprise one each from scarlatina, enteric fever, and diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 157—68 boys and 89 girls; and the deaths to 194—95 males and 99 females.

The deaths, which are 7 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 28·6 in every 1,000 of the estimated population. Omitting the deaths (7 in number) of persons admitted into public institutions from localities outside the district, the rate was 27·6 per 1,000. During the first forty-eight weeks of the current year the death-rate averaged 25·4 per 1,000, and was 3·2 under the mean rate in the corresponding week of the ten years 1879–88.

Thirty-four deaths from zymotic diseases were registered, being 11 in excess of the average for the corresponding week of the last ten years and 21 over the low number for the week ended November 23. They comprise 4 from measles, 5 from whooping-cough, 1 from diphtheria, 2 from simple continued and ill-defined fever, 9 from enteric fever, 5 from diarrhoea, &c.

Twenty-seven cases of enteric fever were admitted to hospital, being 4 over the admissions for the preceding week, but 12 under the number for the week ended November 16. Eighteen enteric fever patients were discharged, 2 died, and 138 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

Six cases of measles were admitted to hospital, being equal to the number for the preceding week, but 12 under that for the week ended November 16. Five convalescents from measles were discharged, 2 measles patients died, and 16 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 1 case of scarlatina and 2 cases of typhus; 9 cases of the former and 7 of the latter disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 40, being an increase of 7 as compared with the number for the preceding week, but 4 under the average for the forty-eighth week of the last ten years. The 40 deaths comprise 28 from bronchitis, and 7 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of November, 1889.*

Mean Height of Barometer,	-	-	-	30.191 inches.
Maximal Height of Barometer (on 16th, at 9 p.m.),				30.619 "
Minimal Height of Barometer (on 24th, at 7 p.m.),				29.290 "
Mean Dry-bulb Temperature,	-	-	-	45.7°.
Mean Wet-bulb Temperature,	-	-	-	44.4°.
Mean Dew-point Temperature,	-	-	-	42.8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			.280 inch.
Mean Humidity,	-	-	-	89.9 per cent.
Highest Temperature in Shade (on 7th),	-			59.7°.
Lowest Temperature in Shade (on 28th),	-			29.6°.
Lowest Temperature on Grass (Radiation) (on 28th),				29.9°
Mean Amount of Cloud,	-	-	-	62.7 per cent.
Rainfall (on 9 days),	-	-	-	.929 inch.
Greatest Daily Rainfall (on 22nd),	-			.359 inch.
General Directions of Wind,	-	-	-	W., S.W., calm.

Remarks.

No greater contrast can be imagined than the weather of November, 1889, compared with that of November, 1888, which was the wettest and most stormy November experienced in Dublin for more than a quarter of a century. The past month was, on the contrary, calm, dull,

and comparatively mild and rainless. An anticyclone held over western Europe with unusual persistence, and the warm, damp, southerly and westerly winds of the system brought a second autumn to the British Islands after the cold and rain of October. Only at the close of the month was a spell of wintry weather experienced in the rear of a remarkable series of V-shaped depressions which passed eastwards across north-western Europe.

In Dublin the mean temperature (46.4°) was decidedly above the average (44.5°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 45.7° . In the twenty-four years ending with 1888, November was coldest in 1878 (M. T. = 38.2°), and in 1870 (M. T. = 42.2°), and warmest in 1881 (M. T. = 50.3°). In 1886, the M. T. was as high as 46.4° ; in the year 1879 (the "cold year") it was 43.9° ; in 1887 it was as low as 42.6° ; and in 1888, it was as high as 47.5° .

The mean height of the barometer was 30.191 inches, or 0.324 inch above the average value for November—namely, 29.867 inches, and 0.501 inch above the mean pressure in November, 1888—viz., 29.690 inches. The mercury rose to 30.619 inches at 9 p.m. of the 16th, and fell to 29.290 inches at 7 p.m. of the 24th. The observed range of atmospherical pressure was, therefore, 1.329 inches—that is, a little more than an inch and three-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 45.7° , or only 1.8° below the value for October, and 9.4° below that for September, 1889: that calculated by Kaemtz's formula—viz. $\text{min.} + (\text{max.} - \text{min.} \times .41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 45.6° , or 1.9° above the average mean temperature for November, calculated in the same way, in the twenty years, 1865–84, inclusive (43.7°). The arithmetical mean of the maximal and minimal readings was 46.4° , compared with a twenty-three years' average of 44.5° . On the 7th the thermometer in the screen rose to 59.7° —wind, W.S.W.; on the 28th the temperature fell to 29.6° —wind W. The minimum on the grass was 23.9° on the 28th. The rainfall was only .929 inch, distributed over 9 days—both rainfall and rainy days fell largely short of the values for the preceding month of October—viz., 4.853 inches on 22 days. The average rainfall for November in the twenty-three years, 1865–87, inclusive, was 2.340 inches, and the average number of rainy days was 16.9. The rainfall and the rainy days, therefore, were very much below the average. In 1876 the rainfall in November was large—3.614 inches on 20 days. In 1872, also, 3.414 inches fell on 24 days; in 1887, 3.012 inches fell on 18 days, and in 1888 6.549 inches fell on 26 days. On the other hand, in 1870, only 1.218 inches were measured on but 11 days, and in 1879 only 1.251 inches on but 10 days. The vast excess of the rainfall in 1888 and the equally marked deficit in 1889 are evident from these figures.

A lunar halo appeared on the 4th, and a solar halo on the 14th. High winds were noted on 4 days, but attained the force of a gale on only one occasion, the 1st. The atmosphere was more or less foggy in Dublin on the 11th, 13th, 14th, 16th, 17th, 18th, 19th, 23rd, and 30th. Lightning was seen on the night of the 25th. Hail fell on the 1st. Sleet and snow fell on the 26th and 27th. An aurora borealis was seen on the night of the 26th.

The month opened with a strong S.W. gale—the only storm which was felt throughout in Dublin. It was followed by a transitory fall of temperature and some cold showers.

Westerly winds, and dull, mild weather were the leading features of the week ending Saturday, the 9th. At first an irregular depression was passing across Great Britain eastwards; it was rainy in England, showery in Ireland, fair and cold over the greater part of Scotland. Monday, the 4th, was cool and fair in Dublin. Some rain fell on Tuesday morning, but this day also proved fine. On Wednesday morning a large Atlantic anticyclone was found off the South of Ireland, whence it extended across the Bay of Biscay to the North of Spain. On the afternoon of this day temperature rose decidedly, and the weather became warm and damp—remaining so until the end of the week. At 8 a.m. of Thursday the thermometer read 31° at Paris, but 59° at Aberdeen, where it rose to 62° later in the day. This remarkable reading for November was also recorded at Loughborough. Even in Northern Russia very little frost was felt during this period. In Dublin the mean height of the barometer was 30.172 inches. Pressure increased from 29.544 inches, at 9 a.m. of Sunday (wind, W. by S.) to exactly one inch higher, namely, 30.544 inches at 9 a.m. of Friday (wind, W.S.W.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 49.7° , and the mean of the daily extremes of temperature was 50.4° . The thermometer in the shade rose to 59.7° on Thursday, having fallen to 39.3° on Monday. Rain fell on two days to the amount of .068 inch, of which .050 inch was entered to Friday. At 8 a.m. of that day the barometer read 30.61 inches at Lorient, and 30.60 inches at Rochefort and at Valentia, in Kerry.

The second week (10th–16th, inclusive) was a period of singularly mild, quiet weather. The distribution of atmospherical pressure was anticyclonic, except in the far North, where depressions were found—of, however, no great intensity. At the beginning of the period, the centre of a large anticyclone, in which the barometer was as high as 30.50 inches, lay off the extreme S.W. of Ireland. The weather was dull and mild. This high pressure system then moved eastwards, decreasing at the same time in intensity. By Tuesday morning its centre had reached Prussia. A sharp morning frost with fog prevailed over central England on this day, but in Ireland it remained very mild, dull, and damp. Up to and

including Friday, the 15th, the anticyclone held over the Continent. On this day a V-shaped depression of no great depth came in over Ireland from the Atlantic. A squally S.W. wind and showers were the result, but the barometer quickly recovered, and Saturday was bright and still, with light winds from N.W. to N.E., and a smoke fog at night. In Dublin the mean height of the barometer was 30·351 inches. Pressure ranged from 30·190 inches at 9 p.m. of Thursday (wind, S.S.W.), to 30·619 inches at 9 p.m. of Saturday (wind, calm). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 48·5°. The mean of the daily highest and lowest shade temperatures was 49·1°. The thermometer rose to 55·7° on Friday, and fell to 41·8° on Saturday. Rain fell on Friday night to the amount of ·030 inch—this was the only measurable rainfall during the week. The air was foggy on Monday, Wednesday, Thursday, and Saturday. A solar halo was seen on Thursday forenoon.

Quiet, mild, damp, and foggy weather held during the greater part of the third week (17th–23rd inclusive). Only on the evening of Thursday, the 21st, did the wind freshen to a squally or stiff breeze, which reached the force of a gale in the West of Ireland. In England, Germany, and France, temperature decreased greatly as the week advanced; but the season remained singularly open in Scotland and even in Scandinavia. This was brought about by the persistent presence of a large anticyclone over Western Europe. In its centre, which lay over Germany, the barometer remained above 30·70 inches from Sunday night until Thursday afternoon—the highest reading of all being 30·76 inches, recorded at Berlin and Wiesbaden on Wednesday. On Thursday night a V-shaped depression advanced over Ireland from the S.W. It caused the strong winds above referred to and a heavy fall of rain on Friday. In the rear of this low pressure system, of no great depth, the barometer again rose quickly and the sky cleared with a sudden fall of temperature. Saturday was at first fair and bright, but in the afternoon a dense vapour fog formed. In Dublin the mean height of the barometer was 30·413 inches, pressure ranging from 30·613 inches at 9 a.m. of Sunday (wind, calm) to 30·058 inches at 9 a.m. of Friday (wind, S. by W.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·3°. The mean of the daily highest and lowest temperatures was 47·0°. The screened thermometers rose to 57·5° on Friday, having fallen to 36·3° on Sunday. Rain was measured on three days, the total quantity being ·469 inch, and the maximal fall in 24 hours being ·359 inch on Friday.

A remarkable and sudden change from autumn to winter took place at the beginning of the last week ending Saturday, the 30th. It proved wintry in the extreme. On Sunday a general and decided fall of the barometer over Western Europe ushered in a complex series of V-shaped depressions, which at 8 a.m. of Monday extended as a trough of low pressure from the W. coast of Norway to the S. of France. In front of

this trough the wind was strong from S. and S.W., with comparatively high temperature and rain—in its rear, fresh N.W. and N., winds were blowing, with a keen, dry air and showers of sleet, hail, and snow. On Monday night thunder and lightning occurred in the North-west of England. At 8 a.m. of Tuesday the barometer was down to 28·52 inches at Bodø in Norway—a frost prevailed, with snow squalls in many places. At night displays of aurora and lightning were reported from Ireland and Scotland. Wednesday was a very cold day—temperature did not rise above 35·6° in Dublin. On Thursday an anticyclone passed south-eastwards across Munster, temperature rose and S.W. winds became established in Ireland. In Dublin the mean height of the barometer was 29·964 inches—pressure ranging between 29·290 inches at 7 p.m. of Sunday (wind, S.W.) and 30·387 inches at 9 a.m. of Thursday (wind, W.) The mean dry bulb temperature at 9 a.m. and 9 p.m. was 38·5°. The mean of the daily highest and lowest thermometer readings was 38·9°. Temperature rose to 52·5° on Sunday, and fell to 29·6° on Thursday. Lightning was seen on Monday night, rain fell on Sunday to the amount of ·275 inch. Light sleet and snow showers on Monday, Tuesday, and Wednesday yielded no measurable rainfall.

The rainfall in Dublin during the eleven months ending November 30th has amounted to 25·718 inches on 178 days, compared with 15·378 inches on 141 days during the same period in 1887, 25·768 inches on 173 days in 1888, and a twenty-three years' average of 25·254 inches on 177·4 days.

At Greystones, Co. Wicklow, the rainfall in November, 1889, was 1·080 inches distributed over 9 days. Of this quantity ·440 of an inch fell on the 23rd, and ·240 of an inch on the 24th. Since January 1, 29·135 inches of rain have fallen at Greystones, on, however, only 121 days.

PERISCOPE.

THE BINIODIDE OF MERCURY IN SCARLATINA.

DR. C. R. ILLINGWORTH, of Accrington, under date November 26, 1889, reports an outbreak of scarlet fever in a family of five children. He considers that each case was aborted in seven days by the biniodide of mercury, but the cases seem to us to have been examples merely of ordinary scarlatina running an usual course. Robert Kay, aged nine, began on September 30th, 1889, with sore throat and fever. Summoned on the following day, in the evening, Dr. Illingworth found him suffering from scarlatina anginosa, and the rash well-marked. He gave the following mixture:—Sol. hyd. bichlor., 3vj.; potass. iod., gr. xv.; sp. am. co., 3j.;

syrup, ℥ss.; aq. ad ℥vj. ℥ss. secundis horis. Throat to be sprayed every four hours with 1 in 2,000 biniodide in sodic iodide. 2nd Oct.—Rash fully out, restless, sleepless, and very feverish. 6th.—The following note made:—The rash became less and less marked each day, until now there is no trace of it. Healthy granulation of the ulcerated tonsils; pharyngeal glandular swelling externally decreasing. Bowels moved once each day; temperature normal. The rest of the family occupied the same room. 7th.—Medicine changed to iron and chlorate of potassium with biniodide in $\frac{1}{8}$ th grain powders three times a day. Sarah Ann, aged three, began with scarlatinal throat, but no rash, furred tongue, vomiting, feverishness, and was treated as for quinsy. 10th.—Stephen, aged five, began with high fever (102°), and rash all over the body. Ordered the following:—Sol. hyd. bichlor., ℥ss.; pot. iod. gr. viii.; sp. am. co., ℥ss.; syrup, ℥iii; aq. ad ℥iss. 3j. secundis horis. 11th.—Stephen passed a bad night. Objects to the spray. Temp., 102·7°. Throat much inflamed and covered with exudation. The application of a 1 in 500 solution of biniodide by laryngeal wire-handled, camel's hair brush, to the throat, ordered three times a day, the father undertaking to see to it. Sarah Ann's case now was one of well-marked fever with rash, and treated similarly. 13th.—John, aged ten, began with high fever, sore throat, and rash. Had same mixture as Robert. Tonsils and pharynx much inflamed and covered with exuded lymph. 14th.—All doing well, except John, who began with purging in the night. The mixture was at once stopped, and the liquor ferri perchlor. fort. in 2½ minim doses ordered, in glycerine and water, every one and a half or two hours, and the biniodide in $\frac{1}{8}$ th grain powders three times a day. 15th.—John's diarrhoea was rapidly cured by the iron. Each case had throat-painting with 1-500 every four hours. Stephen's skin quite from rash; temp. 99°. Sleeps and eats well. 16th.—Stephen's temp. 99°; John improving; Sarah Ann to get up. On the 11th, Maud, aged two years, had inflamed throat and took five or six doses of the biniodide mixture; but no rash ever showed itself, so little notice was taken of the child. 20th.—John's temperature normal. 24th.—Robert, having passed the twenty-second day without kidney symptoms, may be considered free from the danger of any sequellæ. The slightest scurfy desquamation noticeable, and that chiefly affecting the fingers and toes. 28th.—Stephen, after severe ear-ache and swelling under the ear, had a discharge of matter from the left ear. On the 30th Dr. Illingworth was called in, and prescribed the 1 in 2,000 lotion to be dropped in, and the mixture with ammonio-citrate of iron to be taken three times a day for the pain remaining. Maud, who had no throat-painting, was now suffering from a large abscess in the neck. Poultices were applied, and it was incised on November 6th, a large quantity of pus being evacuated. It healed in ten days with carbolic

ointment. *Remarks.*—All four cases had the temperature reduced to the normal in six days, and were convalescent on the seventh; none had dropsy. In one, not at first "throat-painted," the disease caused otitis by extension along the Eustachian tube. The only case of cervical abscess was one in which there had been no local application made. In one—John—urgent purging came on within twenty-four hours, and the throat lesion was noticed to be pharyngeal rather than tonsillar. This was immediately checked by iron frequently given. As regards infection, Dr. Illingworth has since found that by painting the throat with the 1 in 500 solution every four hours, the disease is prevented from spreading. Desquamation in all was merely scurfy, and chiefly affected the fingers and toes.

THE EFFECT OF THE ENTRANCE OF AIR INTO THE CIRCULATION.

DR. HARE, of Philadelphia, has made numerous experiments on dogs (70 in number) by forcing air rapidly into the jugular vein or carotid artery. The result, even when the injection was very large, was in the former case *nil*. When the injection was into the artery (it is not stated whether it was made into the central or peripheral end) respiration ceased, and the animal became unconscious, while the heart continued to beat. Either spontaneous recovery occurred, or death could be postponed by maintenance of artificial respiration. The author concludes—"1. Death never occurs from the entrance of air into the ordinary veins of the body, unless the quantity be enormous—from one to several pints—a quantity which cannot enter unless deliberately sent in by the surgeon; 2. The cases on record have been due to other causes than air, and have not been proved; 3. The tendency of the vessel to collapse and the leakage of blood prevent any entrance of air, and it would seem probable that a clot has generally caused death, not the air itself." The more serious effects of intra-arterial injection is supposed to be due to the greater tendency of arterial than of venous blood to coagulate.—*Therapeutic Gazette*, Sept. 16th, 1889.

PNEUMONIC PARALYSIS.

M. STEPHEN reports (*Rev. de Med.*) two cases of paralysis occurring in the course of pneumonia, and gives a review of the literature of the subject. He concludes by saying that paralysis may develop at the beginning of pneumonia, in its course, or during convalescence. The cause of these paralyzes is in some cases a meningitis (cerebral, spinal, or cerebro-spinal), but in many others there is an entire absence of gross organic lesion. In cases of the first category it is admitted that there is an extra-pulmonary localisation of pneumococci in the meninges; and in those of the second category it seems most probable to the author that the pulmonic affection was determined either directly or indirectly by

the medium of the cerebro-spinal disturbances of a dyscrasia, of a dynamic or functional nature, in the nervous centres, or in the nerves.—*The Montreal Medical Journal*, Nov., 1889.

TUBERCLE BACILLUS.

G. W. WATSON (*Ohio Journal of Dental Science*) says:—"I have very good authority for saying that diseased roots and teeth have a great deal to do in starting tubercular trouble in the lymphatic glands of people predisposed to this disease. Tubercle bacilli, gaining admission to the jaw through the diseased teeth, speedily infect the structures in their neighbourhood. It would be right, therefore, for us to look well to the teeth of patients having a tubercular tendency, and see that they keep their mouth in a thoroughly healthy and aseptic condition."

CHRONIC CYSTITIS IN WOMEN.

In an article in the *University Medical Magazine*, December, 1889, on the treatment of chronic cystitis in women, by Dr. Hunter M'Guire, he recommends the use of citric acid until the alkaline urine is brought to its normal standard of acidity, and afterwards the forcible dilatation of the urethra until it is temporarily paralysed. The dilatation should be done slowly, "twenty or thirty minutes being required before the process is complete." After this a short piece of drainage tube is introduced into the bladder, and the urine allowed to drip into a cup between the legs of the patient. The object of the treatment is to give the bladder complete rest. "It is a good plan to wash the bladder out through the tube once or twice a day with hot water."

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Therapeutical Preparations.

MR. JOHN EVANS, the well-known Pharmaceutical Chemist, of 49 Dawson-street, Dublin, has placed in our hands samples of some of the more recent therapeutical preparations which have enhanced the already high reputation of his establishment. "Evans' Styptic" is of proved efficacy in violent bleedings from the lungs, nose, stomach, or bowels. The dose is a teaspoonful with double or four times the quantity of water every hour or so until the desired effect is produced.

The next preparation is koumiss from pure milk. The value of this is now fully appreciated by the Medical Profession. In it the casein of the milk is so finely divided that, with the carbonic acid formed in the process of fermentation, it does not "curdle" or coagulate. Lactic acid is also present.

Recognising the efficacy of glycerine injections as a remedy in consti-

pation, Mr. Evans has prepared glycerine suppositories of two sizes—the smaller containing half a drachm, the larger a drachm, of pure glycerin. These suppositories are an effective and cleanly substitute for the glycerin enema which has become such a popular means of treatment. A reference to Dr. Walter G. Smith's Report on *Materia Medica and Therapeutics* (see page 58) will show that the use of glycerin suppositories has been introduced simultaneously and with success on the Continent.

Mr. Evans has also sent us a sample of Larochelle's coca wine prepared from the leaves of the Peruvian coca (*Erythroxylon Coca*). Coca wine is recommended as a special stimulant of the nervous system in cases of weariness from prolonged exertion, or the exhaustion consequent on severe and protracted illness.

Eau Minérale Naturelle des Sources Saint-Louis, Vichy St. Yorre.

THE London agency of the highly esteemed St. Louis natural mineral water have forwarded to this Journal a sample case of the waters of Springs Nos. 1 and 2. The former is medicinal, the latter is essentially a table-water, very palatable and an aid to digestion. The St. Louis water issues from the earth at a lower temperature and is richer in free carbonic acid gas than any other Vichy water. It can thus be sent to the most distant countries without losing its therapeutical and dietetic properties.

The analysis of the St. Louis No. 1 Spring yields the following results. It will be interesting to give the analysis of the celebrated Célestins-Spring for sake of comparison:—

	St. Louis No. 1	Célestins
Carbonic Acid -	2·326	1·049
Bicarbonate of Sodium -	5·821.	5·103
„ Potassium -	0·889	0·315
„ Magnesium	0·0828	0·328
„ Calcium -	0·862	0·462
Sulphate of Sodium -	0·3266	0·291
Arsenate of Sodium -	0·0037	0·002
Chloride of Sodium -	0·415	0·534
Bicarbonate of Strontium -	0·415	0·005
Phosphate of Sodium -	0·415	0·091

The indications for the therapeutical use of the No. 1 Spring are affections of the stomach—particularly acid dyspepsia, renal colic, gout, rheumatism, diabetes, gravel, and albuminuria. It aids digestion, and is by no means unpalatable. If desired, it can be taken with wine or spirit.

The St. Louis Waters can be obtained direct from the Manager for Great Britain and the Colonies, 60 Queen Victoria-street, London, E.C. ; or from any first-class chemist, wine-merchant, or mineral water dealer.

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NOTICES TO CORRESPONDENTS.

In future no papers will be inserted as "Original Contributions" except on the distinct understanding that they are sent for publication to this Journal alone, and that only abstracts of them (with due acknowledgment) shall afterwards appear elsewhere.

Authors of "Original Communications" will please consider themselves bound in honour to a strict observance of this understanding.

Authors of Communications are requested to write the prescriptions in their paper in full, and in English.

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FEBRUARY 1, 1890.

PART I.

ORIGINAL COMMUNICATIONS.

ART. III.—*The Houses of the Working Classes, with more Especial Reference to Ireland.* By THOMAS WRIGLEY GRIMSHAW, M.A., M.D.; Registrar-General for Ireland.

(Continued from page 26.)

“THE population of Galway is between 15,000 and 16,000, but notwithstanding its limited size there are from 1,000 to 1,200 houses in an unfit state for human habitation. There is considerable overcrowding both in tenement houses, which are numerous, and in cottages containing only one apartment. The following quotation from the evidence of the Borough Engineer forcibly describes how the labouring classes are housed in this town:—

“The houses in Galway are in a terribly dilapidated state. To give you an instance, there are several large blocks of buildings which are regular tenement houses. In one house there are 22 rooms. At present the system is only to set one room to each family. The landlord or agent never inquires how many inmates are to take possession of this room. The rents of the rooms vary in this house at the present time from 6d. per week to 1s. per week, and there is no restraint put on them as to the number of the occupiers. I have here a note of a very terrible state of circumstances. There is one place where there are a man and his wife and four children occupying a room 9 ft. by 7 ft. 6 in. high.

They have no bed; they have no table and no utensils; and they are in an abject state of poverty and dirt.'

"New Ross is a small town in the province of Leinster, which has the melancholy distinction of having the highest average death-rate in the United Kingdom—the average for the last ten years being 31 per 1,000. Three-fourths of the houses of the labourers have no sanitary arrangements whatever, and some 'respectable houses'—to quote the expression of the medical officer—have none either. The water-supply is very deficient, and of an inferior quality, the sewage filtering into the pipes. The houses are generally overcrowded and badly ventilated, and though the tenement houses are in a deplorable condition, no attempt has been made to enforce regulations under section 100 of the Public Health Act. There are, therefore, sufficient reasons for the excessive death-rate."

I may summarise the results of the inquiries of the Royal Commission—that in London, though vast improvements had taken place, the housing of the working classes is still in a deplorable condition. In the provincial towns of England matters are, as a rule, not quite so bad as in London, but still of a very unsatisfactory character. In country districts the agricultural labourers are, as a rule, badly housed, though in some places they may be well housed. In Scotch towns matters are somewhat better, and the improvement seems to proceed at a proportionally greater rate, but the housing of the agricultural class in the country seems to be very unsatisfactory. In Dublin the defects are very great, and the proportion of those badly housed seems to be greater than in the English and Scotch towns, but the particular instances of unsanitary housing in Dublin do not seem to be so excessive as in London and some other towns referred to in the Report. The state of the housing of the working classes in some of the small provincial towns in Ireland seems to be as bad relatively as in Dublin, or in towns of England and Scotland. The Commissioners do not deal with the question of the housing of the agricultural class in Ireland, that subject having been dealt with by a Select Committee of the House of Commons in 1884, but I think I may add that, as a rule, it is of the worst possible kind. As the state of the housing of our poorer neighbours in Ireland is of more consequence and interest to us than those elsewhere, I shall now refer especially to how we stand in Ireland in this matter. The Reports of the Irish Census furnish information which enables us to measure with a

considerable degree of accuracy the alterations which have taken place from time to time in the housing of the people of Ireland. This system was devised by Sir Thomas Larcom, and divided all houses into four classes. The fourth class includes all single-roomed houses, constituted of mud or other perishable material; the third, a better class, with from two to four rooms and windows; the second, a good farm house in the country, or a small town house, having five to seven rooms and windows; and the first class all of a better description than the preceding. In order to apply a test, so as to ascertain the conditions under which the people actually live, a further classification into four classes of accommodation is made. All families living in fourth-class houses are said to occupy "fourth-class accommodation," as also are all those in third-class houses containing more than one family, all in second-class houses containing more than three families, and all in first-class houses containing more than five families. "Third-class accommodation" consists of third-class houses occupied by one family each, second-class houses with two or three families, and first-class houses with four or five families. "Second-class accommodation" consists of second-class houses occupied by one family and first-class houses with two or three families. "First-class accommodation" consists of first-class houses occupied by only one family.

The result of an examination of the statistics of the Census for 1881 shows that there were in Ireland 66,727 houses of the first class, 442,241 of the second, 390,094 of the third, and 41,025 of the fourth class. In 1861 the respective numbers were 55,416, 360,698, 489,668, and 89,374—showing a decided increase in the number of better-class houses and a reduction to less than *one-half* of the fourth class. This improvement in house-accommodation during the past twenty years has been common to town and country districts. So far this is satisfactory. By special investigation of the condition of the houses in large towns, we find, taking house-accommodation as the best test, that the percentage of families occupying fourth-class accommodation in 1881 were as follows:—Dublin, 42·3; Kilkenny, 11·0; Drogheda, 9·7; Cork, 17·8; Limerick, 17·2; Waterford, 19·8; Belfast, 1·3; Londonderry, Coleraine, and Limavady, collectively, 5·9; Galway, 21·4.

It will be observed that Dublin is pre-eminently the worst in this respect.

TABLE I.—*Showing, for the City of Dublin, the Number of Inhabited Houses, Population, Number of Families, Persons per House, Families per House, and Persons per Family, for each Census period from 1841–81, inclusive.*

		Inhabited Houses	Population	Families	Persons per House	Families per House	Persons per Family
1841	-	20,109	232,726	49,511	11·6	2·5	4·70
1851	-	22,276	258,369	57,818	11·6	2·6	4·51
1861	-	23,001	254,808	58,426	11·1	2·5	4·36
1871	-	23,896	246,826	58,327	10·3	2·4	4·22
1881	-	24,211	249,602	54,725	10·3	2·3	4·56

If we analyse the principal Census statistics for the City of Dublin during the past forty years, we find (see Table I.) that the proportion of house-accommodation, generally, to the population of the City of Dublin has not materially increased. In 1841 the number of persons per house was 11·6 ; it was the same in 1851 ; in 1861 it was 11·1, or only 0·5 less, owing mainly to a decrease of population ; in 1871 it was 10·3, or 0·8 less, owing again mainly to a decrease in population, although the number of inhabited houses had slightly increased ; in 1881 the proportion was precisely the same as in 1871, as increase in population had been exactly met by an increase of inhabited houses, the increase in population being 1·3 per cent., and in inhabited houses also 1·3 per cent. Looking at the number of families per house, we find it has fallen from 2·5, in 1841, to 2·3, in 1881, and is lower by 0·1 than it was in 1871, and by 0·2 than it was in 1861 ; but, on the other hand, the families were larger in 1881 than in 1871 and 1861, which accounts for the persons per house being the same, while families per house have diminished.

If we now consider the nature of those houses and the accommodation which they afford (see Table II.), we find that there were fewer first-class inhabited houses in the City of Dublin in 1881 than in 1841, and that the diminution has been mainly within the past ten years. In 1841 the number was 10,171 ; in 1851 it rose to 10,827 ; in 1861 it diminished ; to again diminish in 1871 ; to show a further and considerable diminution in 1881, when it was only 9,067, or 1,104 less than in 1841, and 1,392 less than in 1871. This latter change is accounted for by the conversion of dwelling-

houses into business premises, many houses previously occupied, partly as dwelling-houses and partly as shops, being completely unoccupied at night, and thus appearing as uninhabited houses on the Census night. This is also shown by the fact that the houses in the City of Dublin, in 1881, showed, as compared with 1871, an increase in the uninhabited houses of 2,001, or 18·9 per cent., but only 315 in the inhabited houses, or 1·3 per cent.

TABLE II.—*Showing, for the City of Dublin, the Number of Houses in each of Four Classes, and the Number of Families resident in each Class of Accommodation, according to the Classification adopted in the Census Reports, for each Census period from 1841 to 1881, inclusive.*

	Houses				Accommodation of Families			
	1st Class	2nd Class	3rd Class	4th Class	1st Class	2nd Class	3rd Class	4th Class
1841	10,171	8,289	1,494	155	5,605	8,412	12,297	23,197
1851	10,827	9,693	1,680	44	5,604	9,345	14,330	28,039
1861	10,688	10,486	1,740	21	5,158	9,815	16,163	27,290
1871	10,459	11,455	1,891	91	5,088	10,523	16,819	25,952
1881	9,067	13,066	2,064	14	4,692	11,013	15,660	23,360

During the same period the second-class houses showed a steady and decided increase, as also the third-class, but to a much less degree. Practically there was not any fourth-class in Dublin.

The number of families occupying "fourth-class accommodation" has steadily diminished since 1851; this is also the case in those occupying "first-class accommodation," but, except for the third-class in 1881, exactly the contrary is the case in the other two classes of accommodation. It is, however, an unpleasant feature that the number of families occupying "fourth-class accommodation" in the City of Dublin was almost the same as in 1841; indeed, it is slightly larger.

We find that the families living in "fourth-class accommodation" have decreased by 2,592 (over 11,000 persons) between 1871 and 1881. This corresponds very closely with the numbers 2,365 for families, and about 10,600 for persons, which have disappeared from the tenement houses in the decade. The number of families occupying second-class accommodation has increased by 490, or about 2,250 persons, which tends to show that a large number of

persons have moved out of the old tenement houses, and obtained accommodation of a better class. Still we have 100,000 people housed in very wretched quarters.

The concentration of families in single houses is in many cases very great. Thus, there were in Dublin, in 1881, 102 houses of the first class, containing 1,020 families.

In the foregoing remarks I have used Dublin as an example, but in the older towns in the South of Ireland—for example, Cork, Limerick, and Waterford—very similar conditions will be found to exist, differing somewhat in degree. In the newer towns of the North of Ireland—such as Belfast—the evil of large tenement houses does not exist to any considerable extent.

This steady improvement in the class of accommodation occupied by the poor is a gratifying feature, which, it is important to note, has been steady and continuous for forty years, being interrupted only by the great famine—owing, no doubt, to the influx of starving people from the country.

In towns the great evil which requires abatement is the overcrowded and rotten condition of the tenement houses. Let us now inquire how far the families of the working population of Dublin are housed in such places. For all practical purposes of inquiry the houses occupied as tenements are confined to houses of the first and second class (see Tables I. and II.). These houses were almost in all cases constructed to accommodate single families of the wealthy or well-to-do classes; they are now each occupied by many families.

In 1881, 1,744 first-class and 1,983 second-class houses were let in tenements, making in all 3,727 houses of this kind. The larger tenement houses were occupied by 13,009 families, or at the rate of 7·5 families per house, and the smaller houses by 9,575 families, or at the rate of 4·8 families per house. In all, there were at the time of the Census 22,584 families, or over 100,000 persons living in these old, degenerated, and dilapidated houses. Comparing this state of things with that which existed at previous Census periods, we find that in both classes of houses the number of families occupying “fourth-class accommodation” has diminished since 1851. In the first-class the diminution is considerable between 1871 and 1881; in the second-class, during the same period, it is very slight. The improvement, however, in both cases has been progressive during the past thirty years. It must be noted, however, that the proportion of families per house has not diminished

in either class between 1871 and 1881, and that it had but very slightly diminished between 1861 and 1881. Therefore, it is evident that overcrowding in the tenement houses has not diminished during the decade 1871-81, and has probably increased with the average increased size of the family, nor can the population have been much less dense in these houses in 1881 than it was in 1861.

From what I have stated, and from the quotations given from the Report of the Royal Commission, I think the fact is proved that a large proportion of the artisan and labouring classes are not properly housed, and that whether we examine the question in great towns, in small towns, in villages, or even in essentially rural districts, the same fact is only too evident, differing merely in degree according to the varying circumstances of the locality inquired into. The question of the housing of the working class is a totally different one in a large town from what it is in a village or rural district. In the largest towns the people inhabit dwellings which not only, in common with those living in less populous localities, afford too little space in each dwelling, and which are unsuitable habitations for civilised man, but the houses themselves are also so closely packed together, and the adjoining lands so completely occupied with other buildings of a better class, that there is no place whereon to build suitable dwellings even when the money is forthcoming for the purpose. Thus it is not only the houses, but the ground upon which they stand, that is occupied unsuitably. Now this is the worst side of the case, as it presents itself in the largest towns. In rural districts, on the other hand, the land is not unsuitably occupied by a population, and it is a mere fact that the agricultural labourer occupies an unsanitary dwelling because he cannot pay for a better, does not care for a better, or no one thinks it worth while to provide him with the opportunity of obtaining a better dwelling.

We thus find that a large proportion of our fellow-citizens are living under circumstances quite incompatible with morality, health, or happiness, and as a result we find disease, pauperism, immorality, crime, and death. The only wonder is, that so much as there is of health, virtue, and contentment, is found amidst such surroundings, and with so little immediate prospect of improvement. The evils arising from improper housing may be expected to prevail to a greater extent in town than in the country districts, as in the latter there are many mitigating circumstances, such as fresh air and healthful employment, which give rural labourers many advan-

tages over the artisans in towns, yet there are *some* exceptions where a well-regulated town seems to have advantages over neglected rural districts. It is practically impossible to make accurate comparisons between the amount of pauperism in different parts of Ireland, owing to the varying modes in which Poor Law relief is administered, and to the varying amount of aid afforded to the poor by charitable organisations in different places. If, however, we arrange the several large towns of Ireland for which separate criminal statistics are collected in order, and compare them with the death-rate, house accommodation, and persons receiving Poor Law relief, we have Table III. for the year 1888, the last available. It will be found from Table III. that Dublin, although standing at the head of the list as having the worst house-accommodation and most criminal population in Ireland, comes in no higher than third on the death-rate list, having only recently risen from the lowest place; we find it singularly low on the poor relief list—namely, No. 5. This, however, is to be expected, inasmuch as the relief afforded by public charities in Dublin is far beyond that of any other Irish town, but it is difficult to detect any constant relation to the population of the badly-housed sick and pauper classes in the towns of Ireland. Notwithstanding, I am of opinion that the wretched condition under which the poor live in Dublin tends materially to promote immorality and increase crime. The excess of crime in Dublin is most remarkable. Of the 236,050 criminal offences in Ireland in 1888, no less than 64,297 were committed in Dublin. Of 5,951 of the more serious crimes in 1888, 3,054 were committed in Dublin, and only 127 in Belfast, and 66 in Cork, or at the respective rates for 10,000 of the population, of 87·3, 6·1, and 8·3. It is scarcely necessary to prove that disease prevails to a greater extent in town than in country populations, but we have in the Irish census statistics some evidence on this point, which, taken with the death-rate, gives very shocking evidence of the low state of health of the town populations in Ireland.

If we consider a populous place with municipal government containing a population of 10,000 or upwards as a town, and term the district in which that town is situated a 'civic' district, and the population of the whole district a town or civic population—the area adopted as comprising the civic population being the Poor Law Union or Superintendent Registrar's District in which such populous place is situated—the result is that the mean civic popu-

lation of Ireland in the decade 1874–80 was 2,476,929, and the rural population 3,816,678, making a total mean population for the decade of 5,293,607.

TABLE III.—*Number per 100 of Population, 1888.*

Town Districts, arranged in order of Crime, 1888— highest to lowest	Death-rate	Percentage of Families having Fourth-class House Accommodation, 1881	Criminal Offences	Poor Relief, Indoor and Outdoor, in Unions in which the Town Districts are situate
Dublin - -	(3) 2.45	(1) 42.3	(1) 18.4	(5) 10.3
Waterford -	(5) 2.28	(3) 19.8	(2) 14.0	(3) 16.7
Cork - -	(4) 2.41	(4) 17.8	(3) 10.0	(4) 16.3
Belfast - -	(2) 2.53	(7) 1.3	(4) 8.3	(6) 9.6
Limerick - -	(1) 2.53	(5) 17.2	(5) 8.0	(2) 16.8
Galway - -	(7) 2.06	(2) 21.4	(6) 7.7	(7) 7.0
Drogheda -	(6) 2.27	(6) 9.7	(7) 7.0	(1) 24.2

Now, turning from deaths to statistics of disease as furnished by the census returns of 1881, we find that, exclusive of lunatics, blind, deaf and dumb, there were returned as sick ("temporarily sick" is the term used in the Census Report) on census night 40,090 persons, or at the rate of 7.75 per 1,000 of the population of Ireland. Of these 40,090 persons, 15,571, or at the rate of 10.51 per 1,000 of the population, were in civic districts; and 24,519, or at the rate of 6.64 per 1,000 in the rural districts.

The deaths among the civic population were 332,526, or at the annual average rate of 22.5 per 1,000; the deaths in the rural population were 634,219, or at the annual average rate of 16.6 per 1,000, or about 5.9 per 1,000 less. Therefore, in round numbers, the deaths among a million of such a civic population would exceed the deaths among a rural population of the same amount by about 6,000 per annum; or if the rural population of Ireland died at the same rate as the civic, there would be an average increase of about 22,000 deaths per annum.

The death statistics are much more exact than the statistics of disease. It will be observed that the ratios between the town and country death-rate and the town and country disease-rate are very close to one another, being in the former at the rate of 1.5 to 1 and in the latter 1.4 to 1.

With respect to the grosser forms of immorality, which it is not necessary to more closely particularise, it is a remarkable fact that the evidence before the Royal Commission showed a better state of things than might have been expected so far as English towns were concerned, and there was practically no evidence on this subject regarding Ireland.

Having now pointed out the defects in the housing of the working classes, and the evils they lead to, I come to the consideration of the remedy.

The first part in the consideration of this question is the apparently gigantic mass of difficulties to be overcome. When dealing with the condition of things past and present in Dublin, I have shown that there has been a general tendency of the working population during the past thirty or forty years—especially during the past thirty years—to remove from the fourth-class accommodation to better quarters.

I think it may be taken as proved that a similar tendency may be observed elsewhere, but it is little more than a *tendency*, as the supply of better accommodation does not by any means meet the demand—so little, indeed, that many of those making the demand have almost abandoned it in despair, and settled down into a sullen forbearance of the existing evils.

Although the mass of difficulties, as I have called it, which has to be overcome seems gigantic, yet it resolves itself into one or two principal items. The first is getting the people out of the condemned houses; the second is finding others for them.

I fully believe if the community solve the first difficulty that commercial enterprise will solve the second. We cannot deal with this question at all unless we admit—first, that clearing of unhealthy areas (i.e., areas covered by unhealthy and overcrowded houses) is an operation which must be carried out as a public measure, and in many cases at an immediate pecuniary loss to the public; and, secondly, that the providing of house-accommodation is a purely commercial operation, which must be carried out on commercial principles, and can be carried out at a reasonable profit.

A great deal of discussion has arisen in connection with this subject as to who is to bear the loss which will be involved in clearing unhealthy areas. Some have suggested the ground landlord, others that no compensation should be given to the owners of these wretched tenements—in other words, that the present house-

jobbers should be compelled to bear a great deal of the expense, as they have hitherto obtained all the profit. I cannot see any justice in either of these propositions. As a rule, the ground landlord has little, in many cases only a nominal, interest in the property, which has been let off on a long lease many years before—in fact, he is a mere rent-charger to a small amount, and can never be anything else. Now, regarding the house-jobber, or immediate landlord of the occupying tenements, I think we should be more merciful upon this individual than we are usually inclined to be. In many cases he is himself a tenant paying a high rent; in some cases the number of interests involved in tenement houses is something wonderful, and the amount claimed by each interested person insignificant. Where such a state of things exists, it is clearly the system that is at fault, and the system is the result of the custom of the community going on for years, it may be for hundreds of years. It is the fault of the community, and the community must bear the money loss. But will this be a real loss? I feel sure it will not. There is nothing more costly to a community than poverty, sickness, and crime, and all these three conditions produce and reproduce one another. Improve sanitation and you will diminish disease; diminish disease and you will diminish pauperism; reduce pauperism and you will materially diminish crime. Again, looking at the matter from a purely commercial point of view, improve the condition of dwelling-houses and you increase the value of property liable to local taxation, and acquire greater security for local rates.

The main question is—What is it to cost? The question of cost is very different in different places. In London it cost £1,661,372 to obtain 42 acres of “unhealthy areas,” provide new streets, and make them fit for building for the purpose of artisans’ dwellings, or £39,580 per acre. In Dublin the cost of obtaining an area of 4½ acres, and treating it in a similar manner, was £27,000, or about £6,352 an acre. The actual cost of “the Coombe Area” was nothing like this, owing to the increased rateable value of the new buildings as compared with the old. The rates derived from the new buildings amounted to £600 per annum more than that collected from the old. A second area in Dublin has been acquired, and cost something more—namely, £24,337 for 3½ acres, or about £7,500 per acre. The cost of the second area (Plunket-street) was really less than that of the Coombe when calculated on the fairer basis of population. The density of the

Coombe area was 219 persons per acre, that of Plunket-street area 520 persons per acre. At all events, it is clear that this kind of work costs six times as much in London as it does in Dublin, and therefore is a striking example of how differently these matters must be viewed in different places. The cost of reconstruction is a different matter, and it has been demonstrated by experience that Artisans' Dwellings Companies can obtain remunerative dividends, and house their tenants comfortably at no higher rents than those paid by tenants of similar means in rotten old tenement houses. Thus the Dublin Artisans' Dwelling Company has housed over 7,000 people, and easily pays 4½ per cent. on the capital invested. Similar results have been obtained elsewhere; therefore the question of housing artisans who can afford to pay rents varying from 3s. 6d. to 7s. per week, can be solved on ordinary commercial principles, if land can be obtained at a moderate rate whereon to erect the buildings.

The most difficult point which has lately arisen in connection with the question of housing the working classes is—How are the very poor, who require only one room, and cannot afford to pay more than 2s. or 2s. 6d. a week, to be housed? No doubt this is a difficult question, but it is quite clear that, if persons cannot afford to live in a healthy dwelling, and pay for it, such persons are precisely in the same position as those who cannot provide themselves with sufficient food or adequate clothing—in other words, they are paupers, and to provide such persons with houses at the public expense is merely granting them poor relief. I believe, however, that it will be found that decent dwellings for the poorer artisans in large towns can be provided at 2s. 6d. per room per week on commercial principles, but to provide paupers with house-room other than in the union workhouse is out of the question when viewed on ordinary economic principles.

The noble gift of Sir Edward Guinness of £250,000 to provide dwellings for the poorer among the working classes in London and in Dublin, is likely to be the means of solving this difficult question. Sir Edward Guinness intends that his gift shall be applied on commercial principles, and earn a profit to be applied to extending the work. If this noble scheme succeeds, and I have no doubt it will succeed, it will certainly be imitated, I am afraid by not many more such generous benefactors, but by others whose commercial instincts will lead them to follow where it is obvious that a secure, though perhaps not very large profit, may be acquired by

building cheap and healthy dwellings for the poorer artisans and labourers. In order that the Guinness trust in Dublin may attain the success it deserves, and which its founder intends, it will be necessary to secure the co-operation of the Government in granting loans on the most favourable terms, of the municipal authorities in facilitating the clearance of unhealthy areas and letting of the cleared spaces on favourable terms, and of private owners of property in granting favourable leases, especially of derelict building grounds.

We have also to consider how our agricultural labourers are to be housed. I have shown that our rural population is robustly healthy—but do they live as human beings should live in a civilised land? They do not, is my unhesitating answer. It is owing to a mild climate, a bountiful provision of fresh air, cheap food, cheap fuel, and simple requirements, that the Irish agricultural labourer is not more unhealthy than he is. He lives so much in a state of nature in many parts of the country, that a house is a comparatively small matter in his domestic economy—it is, in fact, a shelter, and nothing more. I much fear that commercial enterprise will do little in providing accommodation for agricultural labourers as compared with town artisans, for the simple reason that while the latter class is increasing, the former class is diminishing. While manufacturing industries are increasing and calling for labour in towns, tillage is decreasing, and agricultural machinery is diminishing the demand for labour in the country. Thus commercial enterprise is unlikely to provide a commodity in diminished request, and as dwellings for agricultural labourers are unfortunately such a commodity, it is difficult to see how it can be provided except through artificial means, such as the “Labourers’ (Ireland) Acts.” It appears to me the conditions of providing houses for rural populations are almost the reverse of those demanded for urban populations. In the former, the land can be easily obtained; in the latter, this is the great difficulty. In the former, house-building is not likely to be a commercial success; in the latter, it is almost certain to pay. I believe nevertheless that if great care is observed in providing dwellings for agricultural labourers, such can be provided by farmers if they are content with reasonable profits in the way of rent, and are decently liberal in the matter of wages to their labourers; but it is difficult to see how a commercial company or an individual could invest money in Agricultural Labourers’ Dwellings with a prospect of a reasonable interest on the capital invested.

At the beginning of this article I stated that the Report of the Royal Commission on the Housing of the Working Classes had not borne anything like the good fruit which had been expected of it.* I think I may safely say the only fruit it has produced was the Housing of the Working Classes Act, 1885, which did little more, so far as Ireland is concerned, than facilitate the granting of loans for the purpose of constructing artisans' and labourers' dwellings by reducing the interest chargeable under previous Acts. It also conferred some additional powers on local authorities as to the construction of artisans' and labourers' dwellings. Most of these powers were, however, already possessed by the Irish authorities before the passing of the Act. On the whole, this was a very disappointing piece of legislation, as it was anticipated that some comprehensive and useful measure would result from the Report of the Royal Commission. It is to be hoped that some other fruit may yet be borne by the Report of the Commission of 1884.

Besides the large measures of improvement which I have discussed, and which involve demolition and reconstruction on an extensive scale, we have to consider what means there are immediately available for improving the existing habitations of the working classes. These may be comprised under two heads—1st, The enforcement of existing sanitary laws; 2nd, The promotion of philanthropic efforts with the view of inducing the working classes to co-operate among themselves and with their social superiors for the improvement of the condition of these dwellings.

Regarding the first question, I have to a considerable extent dealt with it in a paper published in the *Dublin Journal of Medical Science* of July, 1885 (Vol. LXXX., page 7), and therefore think it unnecessary to repeat here the details there given. I would, however, again remark that the tendency to demand improved sanitary accommodation in Dublin and other large towns, during the last 30 years, does not appear to depend much, if at all, on the sanitary legislation which has taken place during that period; and in the paper I have alluded to, I have, I think, conclusively proved the truth of this remark by comparing the dates of the principal Sanitary Acts with the improvements which have taken place.

There is, however, one section of the Public Health Act, 1878, which provides for the special regulation of tenement houses. This section can be enforced by permission of the Local Government Board; it has been enforced in Dublin, but in some other

* *Dublin Journal of Medical Science.* January, 1890. Page 14.

Irish towns containing tenement houses it is not, I believe, in force. This section of the Act gives the local authority power to make by-laws for the regulation of tenement houses as to :—The number of persons who may occupy such a house or part of a house; the separation of the sexes; for the registration and inspection of such houses; for keeping such in a cleanly state; for the enforcement therein of the provision of privy or closet accommodation, and means of cleansing in proportion to the number of occupiers; for cleansing, ventilating, and limewashing at stated times.

Now the *bonâ fide* enforcement of this clause would do a vast amount to get rid of the most pressing of the great evils. I regret to say, I cannot consider that there has been a zealous use made of the immense power thus conferred by this clause, or of the corresponding power conferred by the Public Health Act in England.

Regarding the second method of improvement which I have indicated, by voluntary efforts, there is the work carried on by Miss Octavia Hill and her coadjutors in London, by which ladies, working on commercial principles, undertake the supervision of, and collection of rents in tenement houses. By this method these ladies are brought into direct contact with the inhabitants of the tenement houses among which they work, partly by instruction, partly by firm but kind enforcement of the rules of health, thus producing beneficial results which are incalculable in their amount, whether considered from a physical or moral point of view.

Besides the work of Miss Octavia Hill, we have the useful work of instruction and assistance carried out by ladies' sanitary associations, sanitary aid societies, and other kindred associations, which are gradually clearing the way and preparing the ground for a more extensive advance in the improvement of dwellings for the working classes.

In conclusion, I have to return my thanks to the many friends who have assisted me in collecting the material for this paper.

ART. IV.—*On the Micro-organisms of Leprosy.** By Dr. P. G. UNNA, of Hamburg.

UP to a recent period, the histological scheme for the pathological changes occurring in leprous organs was as follows :—

In the connective tissue of such organs are formed certain specific nodular deposits, having the characters of the so-called granulomata. These either lead by their pressure to simple atrophy of the functional portions of the organs, or set up fibrous changes ; or, lastly, they may give rise to fatty degeneration, which, in its turn, causes atrophy either by absorption or by ulceration.

The specific nodules of leprosy—the lepromata—are distinguished from the other infective granulation-tumours—those, *e.g.*, of syphilis, tuberculosis, and glanders—by the presence of peculiar yellow, highly refracting masses, which are distributed throughout the tissue as smaller or larger clumps of elliptical or rounded form. These bodies were formerly held to be just as characteristic of lepra as were the caseating tubercles containing giant-cells of tuberculosis, and were many years ago pronounced by Virchow to be tissue-cells which had undergone a peculiar change.

After the invariable presence of lepra-bacilli in all lepromata had been satisfactorily proved, Neisser declared that these characteristic bodies are “cells containing bacilli;” the extraordinary tissue-cells found in leprosy were denominated “lepra-cells.”

As the investigation into the characters of the bacillus lepræ progressed, it was shown, as the result of examinations made by my friend Lutz, and myself, that the structure of this micro-organism is at all times so complicated as to render the old view, according to which it is a simple homogeneous rod, quite untenable.

Our examinations showed that the core of the lepra-bacillus consists of a row of granules which, in their form and staining capabilities, are comparable to free cocci. These are closely surrounded by a common capsule, and when stained, together with this capsule, appear as a row of 3, 4, 8, or more, coccus-like bodies, resembling a rosary. Lutz, therefore, designated the micro-organism “coccothrix.” Yet, neither Lutz nor myself ever doubted that it was a little hazardous to term the round, strongly staining portions of the lepra-organisms, “cocci.” We ventured

* After an Address delivered before the Annual Meeting of the British Medical Association, held in Dublin, 1887. [For the Translation of Dr. Unna's paper we are indebted to Alexander B. M'Kee, M.B. Univ. Dubl., Curator of the Museums, Royal College of Surgeons in Ireland.—ED.]

on this step with a view to emphasise their identity with free cocci, as regards staining capabilities, especially when the iodine-pararosanilin method is employed. And in the second place, we wished by this name to give expression to our belief that the microparasites of leprosy occupy an intermediate position between cocci and bacilli.

The inner capsule, binding the cocci together to form a "coccothrix," is surrounded by a second, and, therefore, older one, which runs tangentially over the cocci, causing the organism, when suitably coloured, to look like a small rod, whence the name bacillus. The "bacillus" itself is again covered by a rather broad, glassy, mucous substance, which can also be rendered visible by appropriate staining; and groups of bacilli are frequently united by this substance to form considerable masses—zoogloea or glæa.

It will be seen, then, that on our view, the most intensely stained portions of the "bacilli" (cocci) are round, and not, as had previously been maintained, hollowed out, so as to present a concavity at either end, into which the round "vacuoles," or spores fitted. Nor does it militate against the view, according to which the nucleus of the bacilli consists of elements which are the equivalents of cocci, that some few of these elements are larger than the others, that they may occasionally have an oval form, or may, some of them, resist the action of the same dye which stains others. The first two varieties represent elements which are just about to divide, such as occur in all cultivations of cocci. The third variety is probably due to the presence of a thicker capsule, and constitutes a resting spore, such as is found in all spore-forming bacilli. These larger elements have all been specially described by Lutz.

These "cocci" are obtained with absolute constancy by means of the iodine-pararosanilin method, while the results given by the substitution of a rosanilin for the pararosanilin dye are quite uncertain. If, however, we have two stains before us, one of which always brings to view the same definite forms, which are so constant that they may be predicted beforehand, while the other reveals different appearances at different times, which are always irregular, it appears to me more natural to accept the simple, regular structure as the true one.

Before this newer method had been discovered, it was customary to speak of unstained spaces in the bacilli, on the supposition apparently that these indicated the occurrence of degeneration. But, on our view, the deviations from the bacillar type, met with in

preparations, are not degenerative, but steps in the normal development of the organism. From a single, round granule, a glœa, containing bacilli, is built up by fission and the development of different capsules. Each element may be separately stained, the coccus, the coccothrix, the bacillus, and the glœa, and it is even possible to clearly demonstrate the different constituents by employing contrast stains.

The undue concentration of attention on the bacillus stage has led to a complete misunderstanding of the chief constituent of the leproma: the so-called lepra-cells are nothing but masses of glœa, and consist, not of animal cell-protoplasm, but of vegetable mucus. This question as to the nature of the lepra-cells has been wrongly confounded with another—whether the micro-organisms of lepra are ever found enclosed in animal cells. I myself have never observed their presence in the tissue-cells of any of the organs examined by me, but this does not concern the question at present engaging our attention.

The glœa permeates the whole tissue in the direction of the lymph-spaces, insinuates itself between the fibres and cells of the connective tissue, between the cells of the prickle layer of the hair follicle, fills up the lymph-spaces and distends them by its growth, giving rise to beaded or sausage-shaped masses. As a result of the obstruction to the escape of lymph, an accumulation of juice takes place in the tissues, which leads to a proliferation of their connective tissue cells quite apart from inflammation; for inflammatory processes take no share in the production of the leproma, though they may occur accidentally later on, probably as the result of an invasion by pus-cocci. Only at the commencement of an acute eruption, which makes its appearance in the skin in the form of an erythema nodosum, and is often accompanied by fever, are true signs of inflammation (emigration of white blood-corpuscles) present around the embolic foci of leprosy. These phenomena very quickly disappear, and then, owing to the gradual spread of the lepra-organisms along the lymphatics of the adventitia of the blood-vessels, solid bands are formed which unite into dense nodules, while in the surrounding connective tissue a hyperplastic process is taking place. Whether this new formation of large, well-developed, connective tissue cells, and of collagenous substance, be regarded as chronic inflammation, or as a connective tissue tumour, makes little difference, for the signs of a true acute inflammation are not observable, and even the reactive hyperplastic process occurring

in the connective tissue and walls of the vessels is unable to keep pace with the enormous growth of the micro-organisms. One-half, two-thirds, or even three-quarters of the leproma of the skin and nerves consists of organisms, so that it signifies little how the remainder of the tumour is regarded—whether as a tumour in the strict sense, or as due to an extremely chronic form of inflammation. The growth of the glæa may, in fact, be ultimately so considerable as to cause atrophy of the proliferated cells. On our view, all the peculiarities of the tumour—its indolence, chronicity, and slightly developed tendency to disintegration—are easily explainable.

Obviously, the staining methods employed must allow of our distinguishing sharply between animal protoplasm and vegetable glæa; all matters which stain both these substances are useless—*e.g.* picric acid stains. Again, all such dyes as stain nuclei only, like hæmatoxylin; such, moreover, as stain the bacilli only, without showing their mucons covering, as is the case with the Koch and Ehrlich stain, do not answer our special purpose. As regards the colouring of the protoplasm, one of the main requisites is that it should allow the outlines of the cells to be clearly discerned, and, therefore, that it should not colour the fibrillar tissue the same shade, as is the case with most of the carmine dyes. Such a stain it was difficult to find. In most of my preparations cochineal was employed for this purpose.

As regards the micro-organisms—we can stain either the glæa alone, or the glæa together with its contents, so that the latter may be rendered visible either as cocci or as granulated bacilli. In preparations stained with cochineal and Victoria blue, and prepared by my dry method (*Antrocknungsmethode*), the blue glæa and the red protoplasm may easily be seen to lie side by side, and not—as the theory of lepra-cells requires us to believe—the glæa in the cell-protoplasm. It is easy to trace the blue masses as they fill up the lymph-channels, leaving the tissues almost perfectly intact.

To my method of mounting sections of leprous tissues, which consists in gradually drying the stained section on the slide and enclosing in Canada balsam, rendered liquid by heating, it has been objected that the *juxta-position* of the organisms and cell-substance is *apparent* only, and depends on the destruction during the drying-process of the cells containing the organisms. This, however, is absolutely not the case, as any one who takes ordinary care in preparing the specimens may see for himself. The heat (that of a

spirit lamp, for instance) must be moderate and gradually applied. The protoplasm must be well stained right out to the cell-borders, for unstained protoplasm becomes, as is well known, invisible on drying. Care must also be taken that the preparations, though well-stained in the first instance, are not partially decolourised—*e.g.*, by the action of acids.

As regards the comparative advantages of my “dry” and the older oil method, I have to say—1. On *à priori* grounds—the dry method is to be preferred, because by it the bacilli are invariably shown to have a *uniform* position relative to the tissues—*viz.*, to lie free in the lymph-spaces. I have made, during the last five years, some 2,000 dry preparations of leprosy, and in no single organ—not even the lymphatic glands or spleen—have I ever found the microparasites in cells; they always lay in the lymph-spaces. On the other hand, as admitted by opponents, the oil method, besides showing the well-known “lepra-cells” (falsely so-called), reveals many hundreds of bacilli in every section which lie free. Now I am always in favour of such methods as give *uniform results*—in this instance, the dry method.

2. On *à posteriori* grounds—my results do not depend on my dry method alone, but have been confirmed by two independent workers—Drs. Kühne, of Wiesbaden, and Chassiotis, of Athens. Both these gentlemen, by employing the oil method cautiously, fully bear out my views with regard to the juxta-position of glœa and protoplasm (*vide Monatshefte für praktische Dermatologie*, 1887, pp. 1,039, 1,097, u. E.H. III.). Similarly, my own scholars have, without exception, as the result of their own investigations, adopted my conclusions, although I proposed to all the task to show me “lepra-cells,” the cellular nature of which should be beyond dispute. My assistant, Dr. Török, lately assistant in the Pathological Laboratory in Budapesth, has independently invented a very good oil method, by which the cells—that is, the endothelial plates of the lymph-spaces—may be most clearly distinguished from the glœa lying in close apposition to them. The sections remain for twenty-four hours in the following solution, which must be further diluted:—

Orcein	-	-	gram.	0·2
Aq. destill.,				
Spiritûs	-	-	āā gram.	10·0
Acid. acet. glac.	-	-	guttæ	2

About ten drops of this solution are mixed with a watch-glassful

of distilled water. The decolorisation is effected with dilute alcohol, and the sections are then treated with absolute alcohol, oil of bergamot, and mounted in balsam. The pale blue glœa-masses are all surrounded by a narrow, uncoloured ring (space between glœa and surrounding endothelial cell). A dull bluish endothelial cell may often be seen, with deeper blue nucleus, to partially surround like a crescent the glœar mass, but without touching it at any place. Usually, as the result of the saturation with oil, the glœa and endothelium so adhere together as to form a so-called lepra-cell. It will be well therefore to give the preference to methods which, like Török's, cause the glœa to contract a little and to withdraw itself from the protoplasm, against which it often projects as a knob.

The simplest means of securing this contraction is the dry method. When the section is dried on the slide all the constituents of the tissue shrink a little, and the periphery of the section being here fixed, the shrinkage will be interstitial. The spaces already present become enlarged, the natural lymph-channels of the skin become widely dilated, and without any tearing, if the drying be carefully carried out. All structures which lie in the lymph-channels and natural tissue-spaces now appear free; no uncertainty can any longer exist as to whether an object lies in or between the cells of the tissue. In short, the dry method distinguishes in the simplest way between structures which do not properly belong together. Without any special exercise of caution, the dry method, therefore, gives a uniform result as regards the chief point in question—*i.e.*, the situation of the lepra-organisms—simply because the organisms are present *only* in the lymph-spaces. Did some of them lie in the cells, it is not possible that they could be removed from the latter by the drying, and were they so removed the cells must be damaged.

If, however, the dry method be rejected, and it be desired to control the oil method by other methods of mounting, I recommend for this purpose that the well-stained preparations should be enclosed in a watery concentrated solution of chloride of calcium, or of acetate of potassium.

The expectation that glœa and protoplasm would be readily distinguished by the differing coefficients of contraction (removal of water by salts) has only in small part been realised. This plan is much less successful than the dry method, inasmuch as the section shrinks in its entirety, and not interstitially only. Still,

owing to the peculiar refraction, an optical line of demarcation often appears between the glœa and the protoplasm.

The attempt to differentiate them by the aid of their differing coefficients of expansion succeeds better. It suffices to lay the well-stained sections for 24 hours in $\frac{1}{4}$ per cent. acetic acid. The collagenous substance swells and carries the adherent connective tissue-cells with it, which are thus separated from the glœa. The latter is generally torn, owing to the dilatation of the lymph-spaces, leaving one portion attached to the endothelial cell, and one portion free. If the bacilli lay with the glœa in the cells, the tearing of the glœa must be accompanied by a tearing of the cells; these, however, always remain quite undamaged upon the collagenous trabeculæ.

ART. V.—*Case of Extra-Pleural Abscess, simulating Empyema.**

By WALTER G. SMITH, M.D.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic in Ireland, Trin. Coll. Dubl.

THE case which I wish to bring forward is, I think, deserving of record, on the ground of its unfrequent nature, and of the difficulties which attended its diagnosis. Indeed, various opinions as to its pathology were expressed by those who saw the case before and after the patient came to Dublin, and certainty as to its true character was attained only by the light of the *post-mortem* examination.

On October 20th, 1888, I was asked to see Mr. S., a gentleman from the South of Ireland. He was a solicitor, thirty years of age, and his history was that of a strong and healthy man, active in his profession, and fond of out-door exercise, especially yachting. Eighteen months previously he had had a slight attack of pleurisy on the right side. He considered himself to be in excellent health until six weeks before I saw him, when he was seized, while on board his yacht, with a sudden sharp pain in the lower part of the right side. There was an indistinct account of his having received a blow or hurt from a spar on that side recently. He sought medical advice, and was told in one quarter that he was suffering from pleurisy, and in another from hepatic affection.

He was put under active treatment; nevertheless, the pain continued; he felt poorly, and lost strength. He then arranged to

* Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, December 13, 1889. [For the discussion on this paper see p. 169].

come up to Dublin, and, upon examination, he exhibited the signs, apparently, of a moderate pleural effusion on the right side. There was complete dulness up to the angle of the scapula, the respiration was feeble or extinguished, and vocal fremitus was lost. From the first there was marked *tenderness* along the eighth and ninth ribs. He looked haggard and worn, and had a moderate degree of pyrexia. Throughout his entire illness the temperature was of a remittent type, usually fluctuating between 100° and 101° . Another persistent symptom was frequency of pulse; it rarely fell below 120. His appetite was tolerably good, although the tongue was red and glazed, and he was tormented with flatulence. After a while these symptoms mended, but recurred later on, and caused a good deal of annoyance.

For diagnostic purposes an exploratory puncture was made over the right side, posteriorly, with negative results. Dr. James Little saw the patient with me, and thought it probable, from the localised tenderness over the ribs, there was disease of the bone. Next day I again punctured, and gave exit to a few drops of foetid, bloody pus.

After this Dr. Purser's opinion was obtained, and we agreed that it was advisable to put in a drainage-tube. Accordingly, Dr. Charles Ball was called in; and when the abscess-cavity was freely opened, about a pint of foetid, sanious pus escaped, and a portion of rib was found to be necrosed. A drainage-tube was inserted, and the case was dressed with great care from day to day. Notwithstanding easy drainage and copious irrigation with antiseptics (permanganate of potassium), the foul, bloody discharge persistently flowed on. Gradually a prominent swelling developed in front of the lower edge of the liver. This soon gave way, the purulent discharge being profuse, but variable in amount. A probe passed in for several inches downwards, and also directly backwards.

About this time Dr. Bennett saw Mr. S. with us on several occasions. The hectic fever became more marked; there were occasional sweats, and the patient's strength commenced to run down; the bowels were very costive; the urine was dark—it never contained bile or albumen.

Early in December the wound in which the drainage-tube lay assumed a very unhealthy appearance. Its edges became excessively painful and tender; ulceration advanced steadily, disclosing a ragged looking, sloughy cavity. Other spots in the adjacent skin

sloughed out; these speedily coalesced, so that, ere long, a huge sloughing ulcer presented itself, of the form of a figure of 8. Along the lower ribs a dusky-red and very firm swelling uprose, looking like a malignant tumour. The final scene soon came, and the patient died January 18, 1889.

Post-mortem examination, Jan. 20th.—The side of the chest exhibited an enormous black gangrenous cavity, from which projected the remains of two or three necrosed ribs.

Thorax.—Right lung partially adherent. A few specks of recent pleurisy on the lower part. Neither pleural cavity contained fluid. The right lung was emphysematous in its upper part, the left lung along its anterior and inferior edges; they were otherwise healthy. The heart and pericardium were quite healthy. The ribs, from the seventh rib downwards, were thoroughly rotten.

Abdomen.—Here was found an immense sloughy abscess which had destroyed the right half of the diaphragm, but left the pleura intact. The liver and gall-bladder were normal. The cavity of the abscess was bounded by the pleura above, and by the abdominal integuments in front, and it was observed that the skin was neither œdematous nor discoloured. The posterior wall of the abscess was formed by the liver, colon, and the right rectus abdominis muscle, which was black and soft, so that the purulent discharge had dissected its way between the skin and muscles, forming a long narrow pouch downwards. The colon was adherent to the liver. The spleen was soft, of moderate size. There was no diffuse peritonitis.

Looking back upon the case, and with the guidance of the *post-mortem* examination, it seems reasonable to conclude that the starting-point of the whole illness is to be referred to the ribs, and that the bone mischief was, probably, due to direct injury.

Suppuration slowly ensued—first, in the thoracic walls; then, creeping downwards, it corroded the diaphragm, and penetrated into the abdominal wall, dissecting the rectus abdominis from the flat muscles in front.

Although the diagnosis of empyema proved to be incorrect, the error may be admitted to have been an excusable one; and it is, at all events, instructive to recall how closely the physical signs of the parietal abscess mimicked those of a pleural effusion.

This case adds another to the list of obscure cases upon record in which errors in diagnosis have been made as to the nature and exact seat of collections of fluid in the lower part of the thorax or in the upper regions of the abdomen.

It is, for instance, by no means always easy to distinguish between supra- and infra-phrenic effusions, and, on the right side, abscess between the liver and diaphragm has frequently been mistaken for hepatic abscess—similarly with perinephric abscess. (*Cf.* an interesting paper by Dr. Hilton Fagge, Guy's Hospital Reports, 1874).

Another point deserving of notice is the remarkable resistance which the two great serous membranes, the pleura and the peritoneum, oppose to the invasion of suppuration from without. Notwithstanding their proximity to a collection of foetid and gangrenous material, and this for a long time, neither membrane was affected to any extent with recent inflammation, and neither serous sac contained fluid.

That extra-pleural abscess may penetrate the pleura appears from an instructive case recorded by Dr. Halley in the "Transactions of the Pathological Society of London, 1855."

ART. VI.—*Chloralamide as a Hypnotic for the Insane.* By GEORGE P. COPE, L.K.Q.C.P., I.L.R.C.S.I.; Senior Assistant Resident Medical Superintendent, Richmond District Asylum, Dublin.

I OWE my first acquaintance with chloralamide to the good nature of Sir John Banks, K.C.B., who, knowing the interest which we take in the Richmond Asylum in new drugs of the hypnotic class, drew my attention, with his usual kindness, to Drs. Hagen and Hüfler's observations in the *Munchener medicinische Wochenschrift*, No. 30, 1889. My chief was so good as to allow me to apply this drug in any case which I thought suitable. The results have seemed so satisfactory that I am disposed to think it is a valuable addition to our list of soporifics.

Chloralamide is a product of the direct combination of chloral anhydride and formamide in molecular quantities, represented by the formula $\text{CCl}_2\text{H} \begin{smallmatrix} \text{OH} \\ \text{NHCHO} \end{smallmatrix}$. In substance it has the appearance of colourless crystals, and is stated to be soluble in nine parts of water. Dr. Casswell Harrison (*The Pharmaceutical Journal*, September 7th, 1889) states:—"I have failed to dissolve 20 grains in 240 fluid grains of water, the actual solubility being about 1 in 14." It is not unpleasant to the taste, although slightly bitter, nor is it astringent. In some instances 25 to 30 grains produced sound and apparently refreshing sleep, but with the majority of the cases which I noted I found that 35 to 45 grains were necessary.

I am not aware of the general use of this medicine in Ireland, but Dr. Paterson, of Cardiff (*The Lancet*, October 26th, 1889), has given an account of the result of its trial in fourteen cases of insomnia, embracing patients suffering from phthisis and heart disease, with very encouraging results. It is important to note that Dr. Patterson observed that chloralamide checked the night sweating of phthisis, and in proof that chloralamide may be safely administered to persons suffering from cardiac disease, phthisis, and pneumonia, I have selected for notice some cases (Nos. 4, 6, 7, 10, 11, 12) in which one of these ailments existed. I have also closely observed the effect of chloralamide as a sleep-producing agent on twenty-five patients suffering from insanity under my immediate care, and the following are brief notes taken by me of the cases which I deemed the most interesting:—

CASE I.—E. H., female, aged twenty-eight, admitted March 5th, 1887. A case of recurrent melancholia. The attacks are characterised by complete absence of sleep, great anxiety, and general restlessness, with suicidal tendencies. Towards the latter end of November, while the patient was suffering from one of these outbursts, I administered 30 grains of chloralamide at 9 o'clock; fell asleep 45 minutes after the draught, and slept six hours. The following night at 8 30 she received the medicine; was asleep at 9 o'clock p.m.; at 2 a.m. she got out of bed. Night nurse reported that patient staggered as if under the influence of drink;* remained quiet, but did not sleep for the rest of the night. Patient continued receiving this medicine for eight nights consecutively with no bad results. Average time slept, six hours.

CASE II.—M'C., female, aged forty-five, admitted October 25th, 1889. A case of melancholia, with suicidal tendencies. Delusions that she has committed an unpardonable crime; that she is going to be killed; says, "I would prefer to die by my own hands;" has made several attempts to do so; extremely restless, excitable, and devoid of sleep; cannot be kept in bed at night. November 2nd, at 8 30 p.m., she received 3ii. of elixir of chloralamide (30 grains). The draught had the desired effect; the sleep produced was unbroken and natural. Chloralamide was continued for four nights; discontinued two; resumed for eight nights consecutively. Average sleep, eight hours, with no bad symptoms. Patient now sleeps the greater part of the night.

CASE III.—B. H., female, aged thirty-two, admitted October 13th, 1888. A case of melancholia agitata. For some time previous to

* Dr. Patterson, Cardiff, also noted a similar effect with chloralamide.

admission insane. Hereditary history (mother and sister)—Delusions that she has some dreadful disease; that her body is falling into pieces; continually rushing to and fro, and clinging to the nurses. At night extremely restless and noisy; cannot be kept in bed. Administered 35 grains of chloralamide on November 2nd at 8 30; slept from 9 p.m. until 6 a.m. Continued the chloralamide until November 7th, then discontinued for four nights (sleeping about three hours, afterwards very noisy). Resumed this medicine until the 25th, with an interval of three nights—17th, 18th, and 19th; produced on an average seven hours' quiet sleep, with no bad result.

CASE IV.—M. H., female, aged forty, admitted March 14th, 1889. A case of melancholia with extreme depression and suicidal tendencies. Delusions that her relatives and friends have been killed. About a fortnight after her admission improved considerably, worked in the division, and appeared more cheerful.

November, 1889.—When she was out along with some other female patients, who had the privilege of country walks, she escaped from the attendants and jumped into a pond. The weather being very cold, this escapade was followed by an acute attack of pneumonia. Became extremely restless and sleepless at night. Received 30 grains of chloralamide for five consecutive nights; average result, six hours' sleep. Patient is again mentally progressing towards convalescence.

Sphygmographic tracings, taken before and after chloralamide was received, showed no apparent change in rhythm, or pressure of pulse.

CASE V.—A. H., aged sixty-seven, admitted May 22nd, 1888. An old case of chronic melancholia. Delusions that she has some infectious disease, and that the rest of the patients have contracted the illness. Occasional outbursts occur, characterised by intense restlessness, hand-wringing, and great anxiety, with complete absence of sleep. During one of these exacerbations, 30 grains of chloralamide were given for six nights consecutively, producing about six hours' sleep on an average. Patient suffers from weak action of heart.

Sphygmographic tracings, taken before and after administration of the drug, showed no change.

CASE VI.—A., female, aged thirty-eight, admitted October, 1889. Phthisical, with very feeble circulation; suffers from melancholia; very seldom speaks; would not take food, so that artificial feeding had to be resorted to. At night absolutely sleepless and extremely restless. On November 22nd, at 8 30 p.m., she received 30 grains of chloralamide; slept from 9 15 p.m. until 6 a.m. The medicine was continued for nine nights consecutively, with marked improvement in patient's general condition; average sleep noted is eight hours. Patient continues to sleep without the drug, and sleeps about five hours.

Sphygmographic tracings, taken before and after the drug was received, showed no change. Respiration and temperature the same.

CASE VII.—M. B., female, aged forty-one, has mitral stenosis. A case of chronic mania. Has a very excitable and uncontrollable temper. Occasionally has attacks of maniacal excitement; intensely restless and violent; noisy and sleepless at night. January 4th, 1890, had one of these outbursts. On the 5th and 6th was treated with 30 grains of chloralamide each night; slept seven, and six and a half hours. Since then no return of maniacal fury.

Sphygmographic tracings, taken on the evening of January the 5th, before the drug was administered, and again on the night of the 6th after the draught, showed no apparent change.

CASE VIII.—S. B., female, aged twenty-three, admitted Nov. 2nd, 1889, suffering from acute mania, with intense restlessness; noisy, mischievous, and untidy; unable to work or fix the attention; very garrulous and incoherent; slept badly, and noisy nearly all night. Chloralamide, 35 grains were given on November 4th at 8 40 p.m. Slept from 9 30 p.m. until 12 30 p.m. The following night did not sleep. On the 7th, 48 grains administered. Slept from 11 p.m. to 4 a.m. Drug was continued till the 12th, with no bad result. Nearly six hours' sleep nightly was produced. Since the medicine has been discontinued patient has continued to sleep well, and has rapidly improved. Now convalescent. Sphygmographic tracings taken showed no apparent change.

CASE IX.—C. E., female, aged forty-six, admitted September 7th, 1889, about eight months after childbed. Was nursing her infant up to day of admission. In fair physical health; mentally very depressed and silent. Remained in this condition for over a week, then followed occasional outbreaks of maniacal excitement, violent and destructive, with alternate attacks of depression. At night slept very badly. Chloralamide was administered in 35 grain doses, and continued for five nights with no bad results, patient sleeping on the whole about eight hours nightly.

CASE X.—B. L., female, aged thirty-eight, admitted August 14th, 1888; from childhood suffered from epilepsy; within the last six years, immediately after a fit (which occurs monthly) maniacal outbursts follow, lasting about a week. These attacks are characterised by uncontrollable fury of a homicidal nature, intense restlessness, and want of sleep at night. During one of these outbreaks, occurring in December, 1889, I administered for two nights 35 grains of chloralamide. First night, slept five and a half hours; second, six hours. After this she continued to sleep well, was less refractory, and the attack was of shorter duration. Patient has mitral valve disease.

CASE XI.—M. E. L., female, aged thirty-four, admitted October 26th, 1889. Wretched physical condition; emaciated and anæmic; marked symptoms of phthisis; very maniacal; noisy, destructive, and violent. At night intensely restless and sleepless; cannot be kept in bed. Administered 30 grains of chloralamide at 9 30 p.m. on November 2nd; patient did not sleep. Next night increased the dose by 5 grains; no sleep followed; 48 grains were next given at 9 o'clock p.m. She slept from 9 45 p.m. till 4 a.m. Chloralamide was continued in same dose for four nights, and then discontinued. She has become quiet, and sleeps the greater part of the night.

CASE XII.—A. J., female, aged thirty, some years in the asylum; very weak-minded; sits unoccupied all the day about the wards, taking no interest in her surroundings. Early in January she suffered from an attack of inflammation of the right lung. At night was extremely restless, sleepless, and could not be kept in bed. For two consecutive nights I gave her 30 grains of chloralamide, which produced sleep for about seven hours. Since then the patient continues to sleep the greater part of the night.

CASE XIII.—M. O'N., female, aged thirty, admitted June 22nd, 1889. A case of recurrent mania. During the outbreaks of maniacal excitement, it is with great difficulty she can be controlled. The attacks are characterised by acts of extreme violence; noisy, untidy, and very dirty, with complete absence of sleep. On November 7th she received 45 grains of chloralamide at 8 30 p.m.: was asleep at 9 p.m.; slept until 5 a.m. For five consecutive nights she received 45 grains of chloralamide, producing sleep on an average seven hours, with very good results, cutting short the attack.

CASE XIV.—M. K., female, aged forty-five, admitted November, 1889. A case of acute mania; strong physical condition; extremely violent, noisy, incoherent, and very destructive; complete absence of sleep at night. Was so violent the first two nights she had to be placed in a single room. On the third night of admission was ordered 30 grains of chloralamide, which had no effect. The following night received 45 grains at 8 40 p.m.; slept from 9 30 p.m. until 1 30 a.m.; and, again, from 1 30 a.m. to 3 30 a.m.; noisy afterwards. This dose was continued for six nights, patient sleeping on an average six hours. Since drug has been discontinued she sleeps the greater part of the night.

CASE XV.—A. B., female, aged forty-two, admitted August 5th, 1887. A case of chronic mania; delusions of persecution, &c.; very irritable and sulky temper; otherwise has her ordinary mental capacity. Lately she has been suffering from hepatic colic, due to the passing of gall stones. To relieve the pain, I treated her with 15 to 20 grain doses of chloralamide

for three days. No relief followed, or sleep supervened. 45 grains of the drug were then given at night. Patient slept five and a half hours.

CASE XVI.—A. K., female, aged fifty, admitted January 7th, 1884. A case of chronic mania; harmless and useful patient; entertained delusions of a religious nature; suffered from cancer of the liver. Some weeks before death complained of acute pain, and was unable to sleep at night. Chloralamide was administered in 15 grain doses three times a day, which did not relieve her sufferings, or produce sleep; 35 grains of chloralamide were then given at night. Patient slept three hours. No ill results followed, but this drug appearing inoperative was not repeated.

CASE XVII.—M'K., female, aged thirty-six, admitted November 10th, 1889, with symptoms of acute mania; noisy, untidy, and very restless; very garrulous and incoherent, mistaking everyone she came in contact with; at night absolutely sleepless, very noisy and restless. On November 13th she received 30 grains of chloralamide at 9 p.m., but no sleep followed; increased the dose to 40 grains the following night. At 9 30 p.m. she got the draught; at 10 30 p.m. was asleep, and continued so until 3 30 a.m. Noisy and restless afterwards. Chloralamide was further increased by 5 grains, and continued three consecutive nights. Sound sleep always followed, lasting about six hours. It was unnecessary to further continue this drug, as she improved rapidly. Left the asylum December 20th, 1889, convalescent.

CASE XVIII.—A. S., female, aged twenty-three, admitted November 4th, 1889. Acutely maniacal; attacks characterised by outbursts of frenzy; destructive, noisy, and using obscene language; at night very restless, noisy, and without sleep; 40 grains of chloralamide had no effect; 50 grains produced only three hours' sleep. On the fourth morning (while using this drug) she was very ill, suffering from emesis; dry brown-coated tongue; no diarrhoea or delirium; temperature 99.2°. Vomiting continued at intervals, for five or six hours. I ceased using this medicine, and have not administered it to her since. She is now much improved mentally.

CASE XIX.—J. B., female, aged fifty-two, admitted July 27th, 1889. A case of melancholia; intensely depressed, with tendency to suicide; replied very little when spoken to; at night was sleepless and very restless; also suffered from chronic bronchitis and weak action of heart. For five consecutive nights she was treated with 30 grain doses of chloralamide, producing sound and refreshing sleep, lasting on an average eight hours. Chloralamide being discontinued, patient continued to sleep well, and is now convalescent.

CASE XX.—O.T., female, aged sixty-five, some years in the asylum. A case of chronic mania. Delusions that things of a dirty nature were in her bed. Immediately the attendant left the dormitory, patient would get out of bed, lie on the floor, and cover herself with the bed-clothing. 25 grains of chloralamide always acted in about half an hour, producing sound and unbroken sleep for seven hours.

In the following cases my colleague, Dr. Nolan, administered, for five to seven consecutive nights, 3iii. elixir of chloralamide (45 grains), with no ill results:—

Initials	Disease	Dose	Average Result, hours of Sleep
J. M., male,	General paralysis of the insane,	45 grains, -	Six hours
J. D., male,	Acute mania, -	45 grains, -	Five hours
H. H., male,	Chronic mania, -	45 grains, -	Five and a half hours
N. R., male,	Acute melancholia, -	45 grains, -	Five and a half hours
A. M., male,	Post-febrile insanity,	45 grains, -	Four and a half hours

I think these cases demonstrate that chloralamide is undoubtedly a sleep-producing agent, that the sleep created varies from five to eight hours, and appears to be sound and refreshing.

A dose of 25 to 35 grains was sufficient to cause sleep in patients suffering from melancholia and chronic mania, but in cases of acute mania small doses had no effect, and sleep was not produced by less than from 40 to 50 grains. No recognised evil effects followed the continued use of this drug for eight days; only one out of twenty-five persons under treatment with chloralamide was noticed to be suffering from gastric disturbances—viz., giddiness and sickness, with dry brown tongue, which followed six hours after a draught, when no sleep ensued (see Case No. XVIII.).

In comparison with other hypnotics, chloralamide, as it consists of a combination of chloral, somewhat resembles it in its action. Both induce sleep, lasting from five to eight hours, but they appear to possess little analgesic influence unless when they cause sleep (see cases Nos. 15 & 16). Unlike opium they will not relieve pain. The time that elapses before sleep is produced varies from thirty minutes to one hour, and the sleep appears to be natural and refreshing. Its action on the circulation is stated to be quite the opposite of that of chloral hydrate, which acts directly upon the

blood pressure, slowing the pulse and respiration, and producing poisonous effects, by direct action on the cardiac ganglia and respiratory centre, causing paralysis of the heart and cessation of respiration. Chloralamide appears, as far as I have been able to ascertain, to be free from such danger. In five cases—one of pneumonia, one of phthisis, one of cardiac disease, and two of insomnia—I obtained sphygmographic tracings before and after its administration, and the blood pressure was not lowered in any of them, while the respiration and temperature remained the same (see cases Nos. 4, 5, 6, 7, 8). Dr. Daniel Leech (*British Medical Journal*, November 2nd, 1889), writing about chloralamide, states that "it seems probable that the formamide element, containing as it does a substitute NH_2 group, will stimulate the circulatory and respiratory centres in the medulla, thus tending to counteract the depressing influence of chloral on them." Reichmann noticed that with doses ranging from 30 to 60 grains the blood pressure was not lowered.

Comparing chloralamide with sulphonal, which has been extensively used in the Richmond District Lunatic Asylum, with very satisfactory results, for the last year and a half, I need not dwell upon the advantages of the latter as a hypnotic agent, because I have practically nothing to add to the observations made by Dr. Conolly Norman (see *Dublin Journal of Medical Science*, January, 1889), and fully confirmed by further experience. Speaking of sulphonal, Dr. Norman states that "its disadvantages are (1) that it is bulky and practically insoluble, therefore difficult to administer, and that, perhaps, owing to its insolubility, (2) it is slow in action," and its price is high. Chloralamide, on the contrary, is not bulky, is tolerably soluble, quick in action (thirty minutes to one hour), and is now cheaper than sulphonal has even yet become.

On the whole it seems that this new hypnotic is well worthy of a trial, having proved for so far safe and reliable.

ART. VII.—*Angina Pectoris in the Heart-Palsy of Acute Infective Diseases.** By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the King and Queen's College of Physicians in Ireland; Physician to the Meath Hospital, Dublin; Joint Professor of Practice of Medicine in the Schools of Surgery of the Royal College of Surgeons in Ireland; Consulting Physician to the Whitworth Hospital, Drumcondra; ex-Scholar and Diplomate in State Medicine of Trinity College, Dublin.

THE object of this paper is to bring under notice a cause of "breast-pang," or angina pectoris, which seems not to have attracted that attention to which I think it is entitled. The cause to which I refer is the cardiac paralysis due to acute infective diseases and, among them, especially to diphtheria. Within the past year three notable cases of heart-failure in infective disease have come under my observation. Of these the first and third were cases of diphtheria; the second was a case of septicæmia. The first showed no marked anginal symptoms; in the second and third these were present in an extreme degree.

CASE I.—A young lady, aged twenty-three, was attacked with sore throat, of a very painful kind, on Wednesday, Jan. 9, 1889. The pain was so great as seriously to interfere with swallowing. I saw her next day, and found a membranous exudation already invading both tonsils, the mucous membranes about the throat being intensely injected and swollen; P. 110; Resp. 26; T. 103·3°. On Friday, Jan. 11 (3rd day), there were extensive diphtheritic ashy-gray foul sloughs on the inner face of both tonsils, particularly the right. The breath was fœtid. On the 12th the urine was turbid from urates, of high density (sp. grav. 1034), and with nitric acid yielded crystals of nitrate of urea, without concentration, at a temperature of 50° Fahr. On the 13th the spec. gravity of the urine rose to 1041, and there was in it a trace of albumen. The patient progressed favourably, but the albuminuria became more marked, the note on the 21st being "sp. gr. 1036—highly albuminous." On Feb. 4 the sp. gr. had fallen to 1020; there was still much albumen in the urine, which deposited a normal quantity of epithelium and mucus, with many spherules of urate of sodium, resembling leucine spherules. A few days afterwards the quantity of albumen began to lessen, and finally the albuminuria disappeared. At no time were tube-casts detected on microscopical examination.

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, January 24, 1890.

And now a remarkable train of paralytic phenomena unfolded themselves. On February 12th the eyesight became defective, and there was photophobia. On the 14th Mr. J. B. Story carefully examined the eyes, and pronounced the lesion to be paralysis of accommodation. On the 16th the paralysis had invaded the palate and fauces—the voice became nasal and food returned through the nostrils. This was followed by intense dysphagia, rendering the administration of nutrient enemata indispensable. On March 8th menstruation set in, accompanied by much pain, nausea, and faintness. The heart's action now became very weak, the least exertion bringing on distressing feelings of sinking, pain, palpitation, and shortness of breath. This lasted for some time, the diphtheritic paralysis meanwhile extending to the muscles of the hands, arms, and legs. Several months elapsed before the patient recovered, but in the end her health was completely restored.

In this case it will be observed that the symptoms of angina pectoris were only slightly marked.

CASE II.—Miss H. R., aged twenty-one, a hospital nursing sister, was attacked with septicæmia at the beginning of April, 1889. On Good Friday, April 19, I saw her in consultation with Dr. James Hanrahan, M.K.Q.C.P., of Hollymount, Co. Mayo. She was then extremely prostrate after nearly three weeks of severe illness, including an attack of endocarditis. Under date April 23, 1889, Dr. Hanrahan wrote to me as follows:—"Poor Miss R. has had a very bad time of it since you left here. Distension and tenderness of the abdomen have increased, with accompanying killing distress and diminution of heart-power. There has also been considerable bronchial trouble. The day before yesterday the temperature fell below normal—to 97.6° —the heart became faintly audible, there was commencing lividity, with very troubled breathing, and an occasional troublesome hiccough, and, in short, collapse; altogether the case looked as hopeless an one as one could imagine. I gave 15 drops of oil of turpentine in hot whisky punch, and applied hot jars, &c. The turpentine certainly did good; and but for it I feel confident she would have died. She had two similar attacks since, but not so desperate as the first one, two days ago. Her temperature on the morning of that day was 100° . Next morning it was 99.6° , and in the evening 99.4° . This morning 98.0° , and this afternoon 99.0° ; pulse 104. There has been more or less diarrhœa—3 to 5 liquid motions in the 24 hours. The kidneys have been all through acting fairly well—urine to-day is muddy, acid, and free from albumen. She has been having 5 grains of salol and 10 grains of sulphocarbonate of sodium every alternate third hour. This afternoon (5 o'clock) there is a decided change, and I think and hope for the better. The cheeks are rather flushed, the abdomen less tender and

less distended. She looks much brighter and is clearer in her mind. To-day she had hot and cold sensations, and a slight rash showed on the dorsal surface of both hands and wrists and also on the legs. I look upon this rash as the result of the carbolates, so I have stopped these and ordered 4 grains of sulphate of quinine in hydrobromic acid every third hour till my next visit—the rash was very like urticaria. She has been almost all the time taking 10 drop doses of Battley's sedative, with 5 drops of tincture of digitalis, and these remedies did their duty well. She has been, and is still, having a good supply of stimulants, port wine and brandy."

On May 13, Dr. Hanrahan wrote again at length as follows:—

"Our patient, Miss H. R., has gone on as well as could be expected; but about a week ago her temperature went up to 101° and 102°; she felt very down and out of sorts; her heart became more excited and irregular in action, and the pulse ran up frequently as high as 136, though she had been lying quietly in bed; then a loud rough rasping aortic murmur became developed—evidently a second attack of endocarditis. This murmur still continues, though it is not nearly so loud as it had been. The temperature is now, I may say, normal, the heart is quieter and steadier, though far from being in a satisfactory state. Within the last five days she has had three attacks of severe pain under the left nipple, which almost took her breath away, and *alarmed* her considerably. Though I have not seen her in one of these attacks, I should say the seizures were decidedly of an anginal character. After them she is depressed and debilitated, with her heart very much excited, irregular, and weak. These symptoms and sensations pass completely away *by degrees* in the course of a few hours, and she is again bright and lively, and feels well. The heart is now the whole trouble—the patient and I dread another attack of this kind.

"Urine fairly abundant. No albumen at any time, though deposits of lithates occur occasionally. Tongue clean, abdominal symptoms all gone, and she is inclined for food. There has been considerable dulness over the base of both lungs. There had been slight puffiness of the feet, but nothing to alarm one. She has been quite free from asthmatic attacks [to which she had been subject from childhood]—those I describe are of quite a different character, and in my judgment are decidedly anginal, notwithstanding her youth and sex, and asthmatic tendency. She is having plenty of fresh air from an open window."

A third interesting letter from Dr. Hanrahan is dated May 18, 1889, and contains these paragraphs:—

"Miss H. R. has had two very sharp attacks of angina since I wrote to you—one at 8 p.m. on Thursday and the other at 3 30 p.m. yesterday.

Unfortunately, I saw neither. The nurses, as instructed, gave the nitrite of amyl, and it acted most satisfactorily, cutting the attack short in a minute or two.

"The attacks come on quite suddenly. There is no warning. She starts up, her eyes protrude with a wild intensely anxious stare, and she shrieks with agony and fear, pupils dilated, hands cold, countenance of an ashy leaden colour, lips more or less livid—she presses her hand tightly to her heart.

"This is a description of what I can gather from the nurses and her uncle and cousin, who have seen her in an attack.

"I know it leaves her very prostrate and in very low spirits, with troubled, galloping, heaving action of the heart. These symptoms pass off by degrees, and she is as bright and lively as possible.

"Her heart has been by no means acting feebly; it has been acting rather too strongly, always with a galloping, heaving action. There is no trace of a murmur at present. It is only for a short time after those attacks that her heart is feeble. Temperature normal, kidneys acting well, bowels kept regular."

I should mention that for some time the patient had been taking a digestive tonic mixture, containing hydrochloric solution of strychnin and dilute hydrochloric acid in solution of pepsin, which seemed to do her good, completely clearing the tongue and improving both appetite and digestion. On May 18th Dr. Hanrahan wrote that she was not then getting the strychnin mixture regularly, for fear of over-stimulating the heart. He added that he was afraid to let Miss R. get up, for after having been up for a short time a few days before she got the pain on going to bed and an attack soon followed. Dr. Hanrahan considered that complete rest for the present was essential. This opinion was fully justified by the result, for in the end Miss R. made a thorough and most satisfactory recovery. It is true that when I last examined her, on July 13, 1889, a systolic murmur was heard at the apex of the heart; but that it was of hæmic origin was at least suggested by the presence of a loud venous hum (Nonnengeräusch, or "humming-top sound") in the right internal jugular vein. In December, 1889, Miss R. was apparently quite well.

In this case the train of events was probably—(1) septicæmia, (2) endocarditis or endo-myocarditis, (3) angina pectoris.

CASE III.—Walter D., aged three years, was attacked on or about Friday, August 16, 1889, with diphtheria. He contracted the disease from his elder brother, Robert, who in his turn had caught it under somewhat remarkable circumstances. The family had been in the habit of spending part of each summer at a house in one of the loveliest

districts of the County Wicklow. This house and the surrounding farm-buildings and offices stood at a considerable elevation above the sea on a mountain slope. The immediate subsoil was a dry, gravelly bed, forming an island in a peaty area. In the summer of 1888 an outbreak among the cattle on the farm was described as "pleuro-pneumonia." This outbreak led to an examination of the drainage of the house and its offices. No sooner were the drains disturbed than an epidemic of sore throat occurred among the household servants and farm labourers, and that the disease was diphtheria is proved by the severity of the attack in several instances. Time went on, and the summer of 1889 found my patient's family in residence in this same house for "change of air." Sore throats once more appeared among the domestic servants, and the heads of the family at the end of a month returned to Dublin, feeling languid and out of sorts, declaring that their holiday had done them no good. The next tenants of the house were the paternal grandmother, uncles, and aunts of the children. To them the elder boy went back on a visit to the infected house, from which he had been absent only four days. In three days more he fell ill, with feverish symptoms and sore throat. He was brought home by his mother, when I found him, on August 12, 1889, suffering from membranous sore throat, the diphtheritic nature of which was soon set at rest by his extreme pallor, great weakness, and the presence of albuminuria. On August 19th, the urine was of normal colour, slightly cloudy, and acid. Its spec. grav. was 1024. It gave a decided albuminous reaction, and darkened in a remarkable way when it was first boiled and then treated with dilute nitric acid (*uro-kramatin reaction* of Dr. George Harley).^{*} Under the microscope only a few octahedral crystals of calcium oxalate, broken up epithelium and mucus, and many vibrios were seen.

On this same day (August 19) I examined Walter D.'s urine, but it was non-albuminous, the spec. grav. being 1015. That day week, Aug. 26, Robert D.'s urine contained only a trace of albumen, and he was practically convalescent, while Walter's urine was high-coloured, acid, and highly albuminous. All this time there was much exudation on both tonsils and as far down the pillars of the fauces as could be seen. The posterior pharyngeal wall was free, although deeply injected. The temperature ranged between 99° and 102° F. Incidentally I may here mention that the father, mother, and infant sister of the two boys all were attacked, but happily recovered. Little Walter, however, "hung fire," and was clearly the subject of a succession of diphtheritic paralyses—nasal, palatal, and finally muscular and cardiac.

Believing that change of air would hasten his recovery, I ordered him to Greystones, and it was arranged that he should leave town on Tuesday,

^{*} The Urine and its Derangements. By George Harley, M.D., F.R.S. London: J. & A. Churchill. 1872. Pages 103 and 111.

September 10. I saw him on Sunday afternoon, the 8th, and found that the slightest exertion in bed brought on distressing breathlessness and palpitation of the heart. Next morning I left Ireland for a brief holiday just at the time when a first attack of angina pectoris prevented Walter's removal to the country for the time being. In my absence he was visited and skilfully treated by my namesake, Dr. William Moore, Physician to the Queen, who allowed him to go to Greystones after a delay of a week or ten days. On my return home, I again visited the patient, but so urgent did the anginal attacks become that I placed him in charge of Dr. J. H. Armstrong, then residing at Greystones. At my request, the patient's mother favoured me on November 26, 1889, with the following graphic and touching description of the dreadful anginal attacks, or "chills," as she called them, to which the child was subject for many weeks :—

"My attention was generally drawn to the chill by Walter's restlessness, screaming, and talking wildly. It was difficult to rouse him sufficiently to take a stimulant—he seemed wandering and unconscious. I could not feel his heart beating in the least; his forehead, cheeks, ears, hands, feet, legs sometimes, and once part of his body (i.e., 'the trunk') were quite cold. I tried first if rubbing and brandy would restore warmth and affect his heart—if not far gone, it has done so after some time. I have waited, though, for ten minutes without feeling any pulsation in his heart, and then given a nitro-glycerine tablet. Its effect was *always* magical. Two or three minutes after taking one I felt a slight flutter, and gradually pulsation was restored. He occasionally had three chills in the one night, but I refrained from using more than three tablets, having recourse to brandy. The chills continued at intervals for about four weeks."

The child seemed to suffer intensely in these terrible attacks, which often threatened to terminate in death. Among other remedies advised and tried were hot poultices over the heart, and wrapping the extremities in flannel wrung out of mustard and hot water.

Walter D. remained at Greystones until late in November, daily gaining health and strength. On the 27th of that month I visited him in his father's own house, and was thankful to find him getting well, although still walking with a paretic gait. The last occasion upon which I saw him was on Thursday, December 5, 1889, when he had a simple fever, which lasted only a day or so.

No one will, I think, deny that all the foregoing cases were examples of cardiac failure from zymotic disease. We have now to consider—firstly, whether I am justified in applying the term "angina pectoris" to the seizures which occurred in the second and third cases of the series; and secondly, what is the nature of the heart-lesion which seemed to lead to their development.

Celsus Aurelianus, a physician who flourished about A.D. 420, is, according to Dr. William Heberden, the only ancient writer who has noticed the complaint, which Heberden himself first called "*angina pectoris*," and he but slightly in the following passage:—"Erasistratus memorat paralyseos genus, et *paradoxon* appellat, quo ambulantes repente sistuntur, ut ambulare non possent, et tum rursum ambulare sinuntur." Chron. Lib. II., c. 1.

In his "Commentaries on the History and Cure of Diseases,"* Heberden describes the affection as follows:—

"But there is a disorder of the breast marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, which deserves to be mentioned more at length. The seat of it, and sense of strangling, and anxiety with which it is attended, may make it not improperly be called *angina pectoris*.

"They who are afflicted with it are seized while they are walking (more especially if it be up hill, and soon after eating) with a painful and most disagreeable sensation in the breast, which seems as if it would extinguish life, if it were to increase or to continue; but the moment they stand still, all this uneasiness vanishes.

"In all other respects the patients are, at the beginning of this disorder, perfectly well, and in particular have no shortness of breath, from which it is totally different. . . . The pulse is, at least sometimes, not disturbed by this pain. . . .

"Such is the most usual appearance of this disease; but some varieties may be met with. Some have been seized while they were standing still, or sitting; also upon first waking out of sleep; and the pain sometimes reaches to the right arm, as well as to the left, and even down to the hands, but this is uncommon: in a very few instances the arm has at the same time been numbed and swelled. . . . I have seen nearly a hundred people under this disorder, of which number there have been three women, and one boy twelve years old. All the rest were men near or past the fiftieth year of their age."

In von Ziemssen's "Cyclopædia of the Practice of Medicine" (Vol. XIV., p. 32), under the heading of "Vaso-motor and Trophic Neuroses," Professor Eulenburg, of the University of Greifswald, defines *angina pectoris* as "a group of symptoms, of which the most characteristic are the following: Pain in the region of the heart, occurring in paroxysms, which usually radiates over the left

* Second Edition. London: T. Payne. 1803. Page 364.

side of the thorax and the left arm, more rarely over both sides and arms; the pain is associated with a peculiar sensation of anxiety and constriction, and often also with other motor, vasomotor, and sensitive disturbances."

Dr. Richard Quain, writing to the same effect in "Quain's Dictionary of Medicine," observes that "the expression is anxious, the face is pallid, and the lips are more or less livid. The whole surface of the body is pale, cold, and covered with a clammy sweat." He adds: "An attack of angina pectoris may come on during sleep."

Dr. Stokes, in his classical treatise on "Diseases of the Heart and Aorta,"^a says that "in the present state of knowledge we must follow Dr. Latham, in considering angina pectoris rather as a special set of symptoms than as a disease having a fixed anatomical character." He concludes "that the special group of symptoms described as angina pectoris by Heberden, Parry, Percival, and Latham, is but the occurrence, in a defined manner, of some of the symptoms connected with a weakened heart." Dr. Stokes points out that the individuals most liable to angina are those in whom we find some form of *weakened* heart, the evil effects of which will be augmented by associated organic diseases, engaging the muscular structures, endocardium, valves, coronary arteries, or the aorta itself. "These considerations," says Stokes, "lead to the doctrine long since indicated by Parry,^b that the symptoms of angina arise from a temporary increase of weakness in an organ already weakened."

Dr. Walshe^c observes that genuine angina pectoris is undoubtedly a very rare affection. "On the other hand," he says, "*I almost daily* meet with a form of complaint combining in a minor degree many of the characters of angina; and to this imitation of the true disease I propose to give the name of pseudo-angina." "Still," says Professor Gairdner,^d "the fact of sudden death, super-added to the evidence of certain sensations preceding death, may be considered to afford the nearest approach we have to an accurate definition of this disease."

^a Dublin: Hodges and Smith. 1854. Page 482.

^b An Inquiry into the Symptoms and Causes of the Syncope Anginosa, commonly called Angina Pectoris. 1799.

^c Diseases of the Heart and Great Vessels. Fourth Edition. 1873. Page 208.

^d A System of Medicine. Edited by J. Russell Reynolds, M.D., F.R.S. Vol. IV. London: Macmillan & Co. 1877. Page 535. Art., Angina Pectoris and Allied States, including certain kinds of Sudden Death.

It is true that in neither of my cases did sudden death occur, but I think it must be obvious that both the patients were during the seizures in the very Shadow of Death. Nor can it be denied that the symptoms of angina were present in both instances. It may be interesting to quote cases which appear to me to be analogous in a less or greater degree to those I have detailed.

And first, with regard to the case of Miss H. R., Dr. Stokes,^a speaking of pericarditis, says that the pain in this affection has been observed to resemble that of angina pectoris in a remarkable degree. Thus, in a case by Andral,^b the patient was subject to dreadful exacerbations of pain extending through the entire of the left side, accompanied by numbness of the left arm, alternating with extreme pain. On three occasions the respiration became difficult, the pulsations of the heart tumultuous, the pulse imperceptible, and the surface of an icy coldness. On the subsidence of the paroxysm the heart's action would again become regular. In this case dissection discovered abundant concretions of coagulable lymph in the pericardium, and the sac itself was distended by a large quantity of bloody fluid.

I am at a loss to know why Dr. Stokes did not at once describe such a case as one of angina pectoris in pericarditis, just as I have described the case of Miss H. R. as one of angina pectoris in endocarditis.

In the case of the little boy W. D., the seizure apparently to some extent resembled an attack of the "angina pectoris vasomotoria" described by Nothnagel in the third volume of the *Deutsches Archiv für klin. Medicin*, 1867, page 309. According to Dr. Hilton Fagge,^c the peculiarity of this form lies in the fact that the earliest and most conspicuous symptoms of the paroxysms from which the patient suffered were coldness and pallor, with numbness and stiffness of the limbs; the palpitation, the feeling of oppression at the chest, the giddiness, the sense of impending death, being all apparently secondary and attributable to the increased efforts which the heart was called upon to make to overcome the resistance opposed to it. The attacks were also definitely traceable to external cold, and pain appears to have a much less marked symptom than in ordinary angina. On the whole, Dr.

^a Loc. cit. Page 49.

^b Clinique Médicale. Tome I. Obs. iii. Page 15.

^c The Principles and Practice of Medicine. Vol. II. Page 13. 1886. London : J. & A. Churchill.

Hilton Fagge thinks that one may take Nothnagel's cases as proving that a sudden increase of tension in the peripheral arteries, due to a cause acting upon the body from without, is capable, in some persons, of giving rise to phenomena approaching those of a paroxysm of angina pectoris.

To the recently published first volume of the "Cyclopædia of the Diseases of Children," edited by Dr. John M. Keating, of Philadelphia, Dr. J. Lewis Smith, Clinical Professor of Diseases of Children in Bellevue Hospital Medical College, New York, contributes a splendid monograph on "Diphtheria." Dr. Smith discusses the various forms of diphtheritic paralysis under the headings—1. Loss of the Tendon Reflexes; 2. Palatal Paralysis; 3. Multiple Paralysis; and 4. Cardiac Paralysis (the cardio-pulmonary paralysis of certain French writers). In illustration of the last form, he briefly narrates the clinical histories of a series of cases of sudden heart-failure, which occurred in the hospital service of one of the most trustworthy clinical teachers of the present time—M. Cadet de Gassicourt. These clinical records are as follow:—

CASE I.—A child of two years entered Cadet de Gassicourt's service on January 3, with diphtheritic pharyngitis of ten days' continuance. The tonsils were large, still covered with pseudo-membrane, and the submaxillary glands were also enlarged. He had no laryngeal symptoms, and his urine was without albumen. On the following day the velum and pharyngeal muscles were slightly paralysed, the speech nasal, and deglutition moderately embarrassed. He was quiet during the night of January 4 and on the morning of the 5th, but at 10 a.m. he became chilly, his face and extremities feebly cyanotic, and slight dyspnoea and dilatation of the *alæ nasi* were observed. His pulse, at first abnormally slow, became rapid; he was agitated, uttered loud screams of distress, and fell back cyanotic and dead. The death-struggle did not occupy more than one minute.

CASE II.—Another infant, also two years of age, entered the same service, having diphtheritic pharyngitis of two days' continuance. The fauces presented the usual red appearance, the tonsils were swollen and covered with a thick exudate, but there was no albuminuria or croupiness. Two days later the pseudo-membrane had diminished, but the velum palati was paralysed. On the following day the general appearance was satisfactory, and the pseudo-membrane had still further diminished. At 8 p.m. the infant was suddenly seized with vomiting, accompanied with great dyspnoea, rapid pulse (160), and a cyanotic hue of the face

and extremities. He was restless, and uttered cries of distress. Two hours later he screamed loudly, raised himself in bed, and fell back dead.

CASE III.—A child of five years was admitted with diphtheritic pharyngitis of two days' continuance, having enlarged tonsils covered with pseudo-membrane, and enlarged cervical glands, but without cough or albuminuria. Seven days later—the ninth of the disease—the pseudo-membrane had disappeared, but the velum palati was paralysed. On the following day there was little change, except occasional vomiting, but the general state was good, and sleep tranquil. At seven a.m. on the following day—the eleventh of the disease—after a calm night, the child uttered two or three cries, the pulse became rapid, the respiration embarrassed, the features, extremities, and finally the entire surface, cyanotic, and at 8 a.m. death occurred quietly.

The similarity of these three cases is apparent. Paralysis of the velum and palate had continued in the first case eighteen hours, in the second case thirty-six hours, and in the third case forty-eight hours, when suddenly the heart and lungs were greatly embarrassed in their functions, and death occurred within one hour from the commencement of the severe symptoms. The agitation, repeated cries of distress, and the shrill cry that preceded death, indicated extreme suffering.

Severe pain, præcordial, epigastric, or abdominal, is present in some if not in most of these cases of sudden heart-failure.

It was probably experienced by these three patients, who were too young to express clearly their subjective symptoms.

It is interesting to observe the great similarity to these three cases presented by the seizures, described as "cardiac syncope," to which the infant king of Spain was subject towards the close of the attack of influenza, from which he suffered at the beginning of this year. Nor is his case devoid of interest from an ætiological standpoint, when we remember that the poison of influenza seems to have a special affinity for the central nervous system, and particularly that portion of it which presides over the innervation of the lungs, the stomach, and the heart.

Gombault made a minute microscopic examination of the affected organs in Cadet de Gassicourt's three fatal cases after the tissues had been properly hardened by chemical agents. The points of special interest in the microscopic examination were the apparently healthy and normal state of the pneumogastrics and myocardium in the one case in which they were examined, and of the

medulla oblongata in the three cases, while the gray matter of the spinal cord, which has no immediate nerve connection with the heart, showed marked degenerative changes.

Dr. Lewis Smith views with favour the theory that weakening of the heart's action in diphtheria, with sudden death as a consequence, should, perhaps, be attributed to granulo-fatty degeneration in the muscular fibres of the heart, consequent upon a prolonged and severe diphtheritic attack. But to him the theory of deficient innervation or a true cardiac paralysis appears most tenable under the circumstances. He sums up the situation in these words:—"The action of the heart may be feeble from granulo-fatty degeneration of its muscular fibres, or from anæmia or general weakness; but sudden and unexpected death from heart-failure is commonly due to paralysis of this organ."

Although Gombault failed to discover any alteration in the myocardium in the one case of Cadet de Gassicourt's series, in which he examined that structure microscopically, the weight of scientific medical opinion inclines to the proposition that in such cases as those described there is a profound lesion of the muscular tissue of the heart. At the close of the first volume of his *Lectures on Children's Diseases*,* Professor E. Henoch, of the University of Berlin, writing on "Myocarditis," says—"When I come to consider the infectious diseases, I shall return to the fatty albuminous degeneration of the heart muscle which occurs pretty often after acute infectious (? infective) disease, especially scarlet fever, diphtheria, and typhoid, and clinically gives rise to no symptoms, except, perhaps, those of cardiac debility." (Page 491).

In the second volume of the *Cyclopædia of the Diseases of Children* there is a short, but interesting, article on "Acute Parenchymatous Myocarditis," from the pen of Dr. J. Mitchell Bruce, Physician and Lecturer on Therapeutics at the Charing Cross Hospital, London. This article seems to me to throw much light on the ætiology of the anginal attacks of acute febrile disorders. Under the names of "acute parenchymatous degeneration," "albuminous degeneration," "febrile softening of the heart," "infectious myocarditis," Dr. Bruce says that from time to time has been described a kind of acute change in the muscular tissue of the heart, which occurs in acute febrile and infective diseases. The opinions of pathologists as to the nature of this disease have

* Translated for the New Sydenham Society, from the fourth German edition (1889), by John Thomson, M.B., F.R.C.P. Edin.

long been, and are still, conflicting, some maintaining that it is truly inflammatory, others that it is degenerative only.

"Parenchymatous myocarditis" is the result of acute febrile and infective processes, such as scarlatina, diphtheria, variola, typhus, typhoid, and relapsing fevers, septicæmia and pyæmia, more rarely measles. The condition may be set up during the later, as well as in the earlier stages of these diseases, or even during convalescence. In it the heart is sometimes distinctly dilated; the myocardium is of a dirty grayish red or grayish yellow colour, with occasional extravasations; its consistence is soft; its substance is lax, flabby, and friable. Thrombi may be found in the ventricles. Microscopically, the muscular fibres are swollen, their striation is more or less lost and replaced by granular (albuminous) and fatty molecules; occasionally they undergo waxy degeneration (Zenker). Along with these evidences of degeneration, there are found certain appearances which suggest *regeneration*. Lastly, the blood-vessels are congested and the seat of thrombosis, with obliterative endarteritis of the arterioles.

Dr. Bruce points out that the pathological connection between this acute parenchymatous change and its causes is still unsettled. It may be the result of the specific action of the several poisons, or of the pyrexia, or of both, on the protoplasm. It is closely related to fatty degeneration of the heart—indeed, if the destructive part of the process be in excess, it rapidly proceeds to fatty degeneration, which then covers, or takes the place, of the other changes.

As regards the symptoms, *cardiac failure* is the chief evidence of this condition of the myocardium. "Either slowly or suddenly," says Dr. Bruce, "a child suffering, for instance, from diphtheria, falls into a condition of collapse. The pulse fails at the wrist, becoming feeble, small, irregular, and either very frequent or remarkably infrequent. The countenance is pallid, with some lividity, and expressive of apathy; not greatly distressed, with pain and dyspnœa, as in ordinary acute myocarditis. The cardiac impulse and the first sound become weaker, and may disappear. Galloping rhythm, or a systolic murmur, is sometimes developed. The extremities are cold, the skin is bathed in sweat. The urine contains albumen. Death occurs in most cases, either slowly, with hypostatic visceral congestions, increasing dyspnœa, and asphyxia, or suddenly by cardiac arrest. Recovery is, however, possible."

Oertel, of Munich, writing on "Diphtheria" in von Ziemssen's

"Cyclopædia of the Practice of Medicine,"^a observes that "the muscular substance of the heart itself, in cases in which the disease has spread principally in the air-passages, and death by suffocation has ensued, appears entirely unaltered, as well in colour and texture as in its histological elements. But if, on the other hand, the diphtheritic process has attacked the whole organism, and the patients succumb to general poisoning and septicæmia, then the muscles of the heart are more or less broken by extravasations of blood, are friable, and show in places accumulations of cells and nuclei between their fibres. When the general disease lasts long, and is very intense, and especially in cases in which death is caused suddenly by paralysis of the heart, the muscle appears pale, soft, friable, broken by extravasations of blood, and on microscopical examination most of its fibres are seen to be already in an advanced state of fatty degeneration."

To sum up:—

1. The group of symptoms described as "angina pectoris" may show themselves in the latter stages of any of the acute infective diseases, particularly septicæmia, or pyæmia, or diphtheria.

2. The anginal attacks of acute infective disease often answer the definition given by Dr. Byrom Bramwell of true angina pectoris—namely, "a neurotic affection characterised by paroxysms of intense pain in the region of the heart, and a terrible sensation of impending death . . . the affection is in many cases associated with organic disease of the heart and the root of the aorta, and in its typical and severe forms is apt to prove suddenly fatal."^b Be it noted that this author, while drawing a clinical distinction between true angina pectoris—rarely met with before the age of forty—and the pseudo-angina, or attacks of cardiac pain to which young persons are liable, is careful to state "that the two forms run one into the other, and that it is sometimes difficult or impossible to separate them at the bedside."

3. These seizures of angina in infective disease appear to arise in the following ways:—

(*a*) Deficient innervation of the heart, or a true cardiac paralysis or heart-palsy.

(*β*) A granulo-fatty degeneration of the heart-muscle, the result of an acute parenchymatous myocarditis.

^a Vol. I. Page 646.

^b Diseases of the Heart and Thoracic Aorta. By Byrom Bramwell, M.D., F.R.C.P.E. Edinburgh: Young J. Pentland. 1884. Page 672.

(γ) A sudden increase of tension in the peripheral arteries, due to a cause acting upon the body from without, reacting upon an already weakened heart—the *angina pectoris vaso-motoria* of Nothnagel.

4. Any one of these causes may operate singly in a given case; or two or more of them may be combined so as to determine an anginal attack.

5. Treatment is often attended by the happiest results in the *angina* of heart failure from infective diseases—the most useful therapeutical measures being:—

(1.) In (α), the administration of alcoholic and diffusible stimulants; the application of hot poultices over the heart, and of mustard epithems to the extremities.

(2.) In (β), besides the foregoing, the administration of heart tonics and stimulants, such as *nux vomica* and strychnin, arsenic, *digitalis*, *convallaria*, and *strophanthus*.

(3.) In (γ), the administration of the nitrites—spirit of nitrous ether, nitrite of amyl, nitro-glycerine, as well as iodide of ethyl, and such like remedies.

ANTISEPTICS *versus* PLAIN WATER.

DR. CHAS. R. ILLINGWORTH, of Accrington, writes, under date Dec. 10, 1889:—"It seems to me that the best way to prove the superiority of antiseptics over water, in surgery, is to use the simplest form of dressing, with a penetrating solvent vehicle for the antiseptic agent. In this way only can the deeper tissues be thoroughly reached, and deep suppuration in all cases be thus avoided. There is no more potent combination of this nature than the solution of biniodide of mercury in iodide of sodium. I have used it in all kinds of wounds, abscesses, and sores, and have found that it prevents suppuration, and ensures rapid union—by first intention in all possible cases—without the slightest irritation of the skin. I bathe recent wounds and amputation flaps once freely with the 1 in 1,000 solution, before bringing the edges together, but wash and dress afterwards with the 1 in 2,000 on ordinary lint once folded, and covered with gutta-percha tissue. I change the dressing every day for four or five days, and then less frequently, or dress with some antiseptic ointment. Dressed in this way with pure water, wounds would stink in two days, and suppurate in four."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Text-book of Mental Diseases. By BEVAN LEWIS, L.R.C.P.
M.R.C.S. London: Charles Griffin & Co. 1889. Pp. 552.

THE volume before us is a splendid addition to the already copious literature of Mental Diseases, which has been evolved from the treasure-house of the knowledge and experience of the Alienist Physicians of Great Britain and the Continents of Europe and America. It is not merely a reiteration of already recorded and well-known facts, nor is it written with the object of advancing and supporting any special or pet theory. It has for its object rather the endeavour to place on a sounder basis, from the anatomical, physiological, and pathological standpoints, the natural history of the various forms and phases of mental derangement. Dr. Bevan Lewis's studies on the pathology of cerebro-mental disease are already well known, and the present work is the outcome of his extended, close, and arduous labours in this direction. The book is divided into three parts:—1. The Anatomical and Histological section; 2. The Clinical section; and 3. The Pathological section. In dealing with the first section the author takes up in succession the minute anatomy of the Spinal Cord, the Medulla Oblongata, the Mesencephalon, the Thalamencephalon, and the Prosencephalon. Then, treating the Encephalon as a whole, from the comparative point of view, he devotes the latter sixty pages of the section to an exhaustive description of the Cerebral Cortex, especially to its "Lamination," and to the structure, nature, and functions of the Nerve-cell. This piece of work is admirably done, and betrays at once the craft of the skilled histologist. A notable feature are the carefully drawn and beautifully executed lithographic illustrations showing the comparative structure of the cell elements of the cortical laminæ from the lower animals to man. Dr. Bevan Lewis lays stress on the importance of this comparative study to a full appreciation of the complex character of the cerebral mantle, and to the recognition of homologous parts

in the mammalian series. Speaking of the nerve cells, the author considers that the examination of fresh frozen sections alone reveals the typical forms of some of these elements, and he is inclined to attribute to the infrequency of such examinations the discrepancy which exists between several well-known authorities on the varieties of nerve cells which exist. He himself distinguishes six—(1) angular, (2) granular, (3) pyramidal, (4) motor, (5) inflated or globose, and (6) spindle cell. To demonstrate these different varieties he recommends the brain of the rat or rabbit, as comprising in a small space all these elements. Discussing the lymphatic system of the brain, it consists, he says, (1) of a distensible sheath loosely applied round the minute blood-vessels—the *adventitial lymph sheath*—which run in a non-distensible channel of brain substance, the *perivascular channel of His*; (2) of loop-like saccular dilatations connected with the perivascular channels in which the nerve cells lie surrounded by plasma—the *pericellular sacs*; (3) of a system of plasmatic cells with numerous prolongations in intimate connection with the adventitial sheaths, which he terms the *lymph connective elements*, and which had been previously recognised by Deiters. Passing to the study of the lamination of the cortex, to which he devotes special attention, our author describes eight distinct types of cortex, which are abruptly separated from each other by regional demarcations in the lower animals, but which in the higher animals, and especially in man, blend, as it were, into each other by what he calls “transition regions.” In this enumeration of laminar types Dr. Bevan Lewis is in disagreement with Meynert, who describes but five types of cortex; and, further, he joins issue with him also in some cases in his description of the specific characters of individual types of cortex—as, for instance, in regard to the variation in size of the different nerve cells, Meynert holding that the so-called “giant cells” of Betz in the ascending frontal convolution owe their huge size to the greater depth of the cortex in this situation, while our author considers their size to be essential to the nature of the functions they have to perform in that region.

Part II., the Clinical section, is concise and tersely written, and well combines the practical symptomatology of mental diseases with the psychological and physiological factors concerned in their production. Dr. Bevan Lewis judiciously avoids reiterating the many and cumbrous classifications which have been suggested from time to time, dealing broadly with marked clinical types of

insanity, and with derangements the result of well-ascertained causes, or occurring at special epochs of life. He describes in succession states of depression, states of exaltation, fulminating psychoses, states of mental enfeeblement, recurrent insanity, epileptic insanity, general paralysis of the insane, alcoholic insanity, insanity at the periods of puberty and adolescence, at the puerperal period, at the climacteric period, senile insanity. The clinical pictures presented, while containing nothing very novel, in outline are vivid and striking in detail, and interesting as well to the general practitioner as to the specialist. In speaking of states of depression, for instance, he says—"The very earliest signs preceding genuine pathological depression are really the symptoms of cerebral anæmia and nervous exhaustion. The cerebral functions are torpid, there is diminished activity both of the impressive and expressive realms of the cortex, as above described, and negative states predominate throughout. The subject is heavy, languid, sleepy; frequent yawning occurs—not the *insomnia* of a more advanced stage; intellectual efforts are oppressive, and thought becomes dreary, monotonous, and painful. If the warnings thus afforded be disregarded, there arises the *frequent* recurrence of a painful idea, *occasional* sensory hallucinations, sleeplessness—all indicative of a commencing pathological change, of impaired centric nutrition. In the earlier stages, where warning is not taken, and where, despite such clear evidence of cerebral exhaustion, the brain is made to do its daily round of duty, in a state utterly inadequate for such exertion, unless absolute rest be here enjoined, the next step will certainly issue in pathological depression." Space prevents our following this portion of the book; but we may say, in passing, that the chapter devoted to the consideration of the insanity of pubescence and adolescence is especially worthy of careful perusal.

It is, however, to Part III.—the Pathological section—that the work owes its chief merit. Never before has there been such a systematic attempt made to trace out the pathology and morbid anatomy of cerebro-mental disease, and in this respect it may fairly be said that Dr. Bevan Lewis's work is a "new departure" in Text-books on Mental Disease. He has here brought together in permanent form his numerous researches into the pathological histology of the various elements of the nervous structures, and his careful and elaborate descriptions are supplemented and enriched by a complete series of beautifully executed lithographic plates,

reproduced from the author's own drawings; and the publishers may well be complimented on the enterprise they have shown in furnishing the book with such costly and valuable illustrations.

In this section are treated successively—the Pathology and Morbid Anatomy of the Cranial Bones, the Dura Mater, the Pia Mater, Arachnoid, Arachnoid Hæmorrhage, Adherent Pia, Vascular Apparatus, Congestion, Inflammation, Softening, Atrophy, Miliary Sclerosis, Colloid Degeneration, Granular Disintegration of Nerve Cells, Pigmentary or Fuscous Degeneration, Developmental Arrest of Nerve Cells, Vacuolation of Cell Protoplasm, Vacuolation of Nucleus, Destruction of Intra-cortical Nerve-Fibre Plexus, Tissue Degradation from Over-strain, Tissue Degradation from Active Morbid Processes, Tissue Degradation from Disuse, General Summary. In speaking of adhesion of the pia to the cortex, and of morbid vascularity of the latter region, he says:—"The microscope reveals infiltration of the cortex by large numbers of peculiar spider-like cells, oval, flask-shaped, or globose; but all throwing off numerous delicate fibrillar processes, which entwine upon the vascular walls, and meander amongst the nerve elements of the cortex. Such spider-like cells are found in *all* recent adhesions in the upper layers of the cortex immediately beneath the adherent pia, forming a direct connection with its under-surface and the vessels passing from it into the substance of the brain. Around the walls of the blood-vessels these elements tend specially to crowd, and their ramifying extensions will probably, by subsequent contraction, seriously interfere with the *permeability of these channels of nutrient supply*. The prominent rôle assumed by these organisms in general paralysis of the insane, the frequency with which they are seen, and their very striking features, induced certain observers to regard them as pathognomonic of this disease. We had, however, some years previously indicated and sketched their appearance in senile atrophy of the brain, and had recognised their existence in other morbid conditions—in fact, they represent a hypertrophied state of what, in our section of the normal histology of the cortex, we have described as its "lymph connective system." To these branching cellular elements the author gives the name of *scavenger cells*, and he describes them as being found in very large numbers in chronic alcoholism. After mentioning the proliferation of the nuclei of the sheaths of the vessels in that condition, he says:—"Far the more prominent feature, however, is the abundance of *scavenger cells* which pervades

the upper or outermost region of the peripheral zone of the cortex lying immediately beneath the pia. These nucleated protoplasmic bodies are everywhere seen, their branching processes forming a dense matting, which converts the outermost fourth of this cortical layer into a closely-felted substance of minute meshes, the aspect of which differs strikingly from that normal to this region." This condition is beautifully illustrated. Again, in speaking of the destruction of the cortical nerve-fibre plexus, he says :—"That delicate system of lymph connective elements to which we have alluded as permeating (in the normal state) the whole of the cerebral mass of white and gray substance, takes a more active share in the pathogenesis of mental decadence than any other, and the more the question is investigated the greater importance, we feel convinced, will be attached to these elements in the processes of disease as affecting the nervous centres. Their physiological indications are clear—they are the scavengers of the brain—and the evidence obtainable renders it now incontrovertible that they are liable to excessive and rapid development under certain morbid conditions affecting cerebral nutrition and repair. In the normal condition of healthy cerebration, these elements, far from being obtrusively present, are so delicate and pellucid that they often escape detection; but that they are universally present can be readily verified by special methods of examination. Whatever leads to increased waste of cerebral neurine, whenever structural disintegration is slowly proceeding either in nerve-cell or fibre—whenever accumulation of *débris* occurs from disease of the vascular tracts—then we invariably note an augmented activity registered in the scavenger elements of the brain. That their activity is in direct ratio to the functional activity of the essential neurine tissue we think there can be no doubt, nor that with each accession of the nerve-tide they are stimulated to increased activity in the removal of the products of waste and the plasma effused from the vessels. In *healthy states*, however, they never assume the hypertrophied form, the deep staining, the coarse fibrillation, the rapid multiplication, and the evidence of obvious intracellular digestion, which are so readily observed in pathological states." We have noted this point at length, as we believe Dr. Bevan Lewis to be the first observer who has laid stress on the true physiological import of these so-called "Deiters" or "spider cells," and to explain their obtrusive presence in diseased conditions. Another interesting and little-dwelt-upon morbid condition to which the author directs attention

is the "Developmental Arrest of the Nerve Cell," which he has observed, however, only in cases of epileptic idiocy, having failed to detect it in simple forms of congenital defect and deaf mutism. Without entering on further details, we may say, in a word, that every page here is bristling with important facts, derived from the author's own researches. The book as a whole is worthy of its author, and of the great institution over which he presides, from which during past years so much good and lasting work has emanated, and its dedication to Sir James Crichton Brown is a graceful tribute to the man who raised the West Riding Asylum to the proud position it holds as the foremost centre of scientific research in psychological medicine in these countries. As a standard work on the pathology of mental diseases the volume should occupy a prominent place in the library of every alienist physician.

R. A.

RECENT WORKS ON ANATOMY.

1. *An Elementary Treatise on Human Anatomy*. By JOSEPH LEIDY, M.D., LL.D.; Professor of Human and Comparative Anatomy in the University of Philadelphia. Second Edition. London: Smith, Elder, & Co. 1889.
2. *A Manual of Practical Anatomy*. Part I. *Upper Limb, Thorax, Lower Limb*. Second Edition. By Professor D. J. CUNNINGHAM, Dublin University, assisted by Dr. H. ST. JOHN BROOKS. Edinburgh: MacLachlan & Stewart. 1889.
3. *A Text-book of Human Anatomy*. By ALEXANDER MACALISTER, M.A., M.D., F.R.S., &c.; Professor of Anatomy, University of Cambridge. London: Charles Griffin & Co. 1889.
4. *Journal de l'Anatomie et de la Physiologie normales et pathologiques de l'Homme et des Animaux*. Publié par MM. GEORGES POUCHET et MATHIAS DUVAL. Paris: Félix Alcan.

1. THIS is the work of an American anatomist, and we approached its perusal with pleasant anticipations of an anatomical treat, for to be in keeping with American reputation we felt that it should contain, if not anatomical novelties, at least the latest anatomical facts told in the best manner. But we must admit that on reading the book our hopes were not realised—in fact, we felt disappointed. Not only were the hoped-for novelties absent, but we found that

there were many important anatomical facts which have been added to our storehouse of knowledge in recent years entirely unnoticed. We do not wish to be hypercritical, but we fear that few will be satisfied with, for instance, the description of the position and relations of the stomach. It is hardly in keeping with strictly accurate anatomy to locate the cardiac orifice "in front and to the left of the last thoracic vertebra," and to say that "the pylorus occupies nearly a median position in the vicinity of the last thoracic vertebra" (when empty, of course). Besides, a very inadequate idea is given of the direction of the axis of the organ. Again, we would call attention to the description of the cæcum in view of the late investigations of Treves upon the anatomy of the abdomen; and many similar inaccuracies.

Altogether, we must confess that there is a free-and-easy method of stepping lightly over anatomical difficulties which cannot be very satisfactory to a student (at least an inquiring one) who is anxious to get some help from his text-book in mastering the difficulties of his subject.

As to the plan of the work, which is intended for students, first comes a very short introduction, then the general and special anatomy of the skeleton, including the articulations. Thus after the bones of the upper extremity come immediately the joints of the upper limb, &c. Next, general anatomy of connective tissues, followed by the histology of muscle and the anatomy of the muscular system, and so on through the remaining systems of the body—alimentary, vascular, respiratory, urinary, reproductive, nervous, &c.

A particular feature in the work is an attempt to popularise anatomical terms by changing them largely into their English equivalents—an attempt with which we can hardly sympathise. We fully agree that much might be done—and much is being done—to place anatomical nomenclature upon a more firmly scientific basis; but that end is not to be arrived at by converting faulty Latin terms into equally faulty English ones. Besides, Latin terms have their use—they are generally understood and generally applied, and they thus form intimate bonds between anatomical work in different countries, and render the task of reading foreign anatomical records much simpler than it would otherwise be. This plan of using English names sometimes disguises in a strange garb many old anatomical friends; for instance, few will recognise in the "greater pre-rectus" the rectus capitis

anticus major; again, the "quadrate lumbar muscle" is the *quadratus lumborum*, and the term "scapular elevator" effectively disguises the *levator anguli scapulæ*. The "terete pronator" is the *pronator radii teres*; the "superficial digital flexor" is the *flexor sublimis digitorum*, &c.

The illustrations, some five hundred in number, are partly original and partly from standard works. As a rule they are clearly and distinctly printed, and some of them—particularly the diagrammatical representations of the mucous membrane of the alimentary tract—are strikingly original, though *extremely* diagrammatical.

In conclusion, we cannot say what popularity this work may enjoy amongst students on the other side of the Atlantic, but we feel convinced that in its present form it will hardly commend itself to students on this side, who will scarcely be tempted to give up the text-books of Quain, Macalister, Gray, Ellis, Cunningham, &c., for their American rival.

2. For this neat, handy book we have little but words of praise. Professor Cunningham commenced several years ago, when he was still connected with Edinburgh University, a series of dissecting guides, which were intended to do little more than point out the methods of dissecting the different regions of the body. The first of the series published was upon the dissection of the upper and lower limbs and the thorax. After a short trial it was found that students objected to using two books while dissecting—one to tell them what to do, the other to give an account of the anatomy of the part. Seeing this, Professor Cunningham wisely made the second volume of the series not only a guide to the method of dissection, but he also gave in it a complete account of the regional anatomy of the part dissected. The result was his charming and successful little book on the abdomen. After some years this was followed by a third volume—on the head and neck (which, unfortunately, leaves out the eye, ear, and brain)—on the same lines as Vol. II., and equally successful. The present volume—a second edition of Vol. I.—is an attempt, and a most successful one, to bring the first of the series into line with its two later companions. In this work Professor Cunningham has been ably assisted by Dr. Brooks, whose keen anatomical knowledge and untiring patience in research are so well known. As might be expected, the result in the book before us is eminently satisfactory. The authors

have produced a work at once accurate, clear, interesting, and *readable*. These three last characteristics make it particularly suitable for junior students, for whom chiefly, we presume, it has been written. Although particularly adapted to the requirements of beginners, senior students cannot afford to neglect it, for they will find there the great truths of anatomy, narrated in that entertaining style of which Professor Cunningham showed himself a master in his volume on the Abdomen.

The illustrations are very good—so good, that we wish they were more numerous. Very many of them are tracings of frozen sections, which is a decided advance in the proper direction. But pictures of good *dissections* of every part ought to be present—such pictures are of the greatest use in guiding students in their work.

On the whole, we can truthfully say the book fulfils the object for which it was written, and what higher praise can be bestowed on a book? It is a simple, readable, and accurate account of the anatomy, and method of dissection of the upper and lower limbs and of the thorax, and as such we heartily recommend it, particularly to younger students.

One word more—a practical word. When the series is completed (which, we trust, will be soon), it will consist of four volumes, of presumably uniform price. The cost of these four volumes might be, we would suggest, diminished with advantage, or the four parts might be combined and issued as one volume at a reasonable price, and thus put it on a nearly similar footing as to price with what will be its chief rival—that little work which has already, and deservedly, attained to such popularity, “*Ellis's Démonstration in Anatomy*.” We know anatomists who would adopt in their schools Professor Cunningham's Manuals were the series complete and the price on a level with “*Ellis's Demonstrations*,” two things which at present debar them from doing so.

3. Professor Macalister's work is a large and closely-written book, of more than 750 pages. At first sight, one is a little disappointed at the size and apparently small amount of matter contained in it, but a closer perusal removes this impression, and shows that the book is not only very large, but that, in proportion to its size, it contains an enormous amount of valuable matter. So very great, indeed, is the amount, that it would be useless to attempt to criticise the work in detail; it will be more useful to give an idea of the author's purpose in writing the book, a sketch

of the plan by which he seeks to accomplish this purpose, a general criticism of the principles of this plan, and an opinion as to how far the work fulfils the object for which it has been written.

The purpose of the work would appear to be to produce a manual of anatomy *suitable for students*, which would fulfil in itself the office not only of a text-book, but also of a dissecting guide, which further would treat anatomy from the high standpoint of morphology, and thus raise it above mere empiricism, and which, at the same time, would not lose sight of the practical connections of every important anatomical fact. To us all these seem laudable and commendable objects. We certainly feel that human anatomy, as taught in our English text-books, requires a more thoroughly scientific foundation than any author up to this has attempted to build it upon, and we hail with extreme satisfaction Professor Macalister's able effort in that direction, especially when he undertakes to combine with it the practical side of the subject. With regard to substituting one text-book, such as this before us, for the two commonly used by students—a dissector such as Ellis's for dissecting-room work, and a systematic anatomy for consecutive reading of the subject—we must differ from Professor Macalister's opinion. Indeed, the one great regret we feel, after reading his book, is that he did not write a systematic anatomy (which, he says, would have been much easier) instead of a hybrid. We feel certain that the result, with the same trouble, and same valuable facts put together, would have been much more satisfactory. One reason out of many for this opinion: without reading a systematic work students rarely obtain consecutive ideas of the various parts, or a wide and connected grasp of the different systems.

The plan of the work is as follows:—The first twenty pages are devoted to a short history of the general development of the various systems of the foetus. Next come nearly eighty pages devoted to the histology, development, and nature of the tissues. This is followed by the anatomy of the bones and joints (after the bones of a part are completed the joints are described). Then come, in order, the back, upper extremity, thorax, abdomen, lower extremity, and head and neck; the anatomy of each of which is described in the order of dissection, accompanied by an account of the method of dissection and of the histology and development of the various organs as they are met with. Descriptions of the eye, ear, brain, and spinal cord, complete the letterpress of the book. In addition, we must mention the fine collection of illustrations—

over 800 in number, most of them excellent in the matter portrayed, and excellent in their production—still there are some which might be a great deal clearer, and others again which might have been omitted, so little information do they contain. The index and title of contents are very good, still the index might be improved; we sought in vain in it for information on the origin and early course of the chorda tympani nerve, and succeeded in finding it only on turning to the table of contents in the beginning of the book. Regarding the plan of the book, we have already said we regret that the systematic method had not been adopted for such a work; but, having adopted the topographical order, we fail to see why the joints are not done in their proper places, under the headings of the different limbs, &c.; or why the spinal cord is not described where its dissection is given—in the direction of the back; but these are minor details.

The amount of anatomical matter contained in the book is great, and the facts bear, as a rule, the appearance of having been carefully verified before they were committed to their present form; nevertheless, there are some statements in the book to which we might take exception. It appears to us that Professor Macalister has sometimes a tendency to pay less attention to the observations of British anatomists than these observations would warrant, especially when the contrary views are set forth by foreign anatomists.

Two things are very remarkable about the descriptions in the work. On the one hand, the most extreme minuteness of detail is looked for in certain places—for instance, the number of the foramina Thebesii of the right auricle, the number of Pacinian corpuscles on the fingers. On the other hand, important anatomical facts frequently are treated in the briefest possible fashion. The arrangement of the muscular fascicles of the ventricles is dismissed in very few words. The convolutions and fissures of the cerebrum are sometimes little more than named. Indeed, the whole nervous system is described in a very short space.

A marked feature of the work is that authorities are not quoted—this to the student is a blessing; from the anatomist's point of view it is to be regretted.

Does the work fulfil the object for which it was written? So far as that object was to produce a high-class text-book, written upon scientific principles, treating the subject from an advanced and elevating point of view, and tending to raise the standard of

scientific anatomical teaching in this country—so far as this was its object, it has succeeded, and succeeded thoroughly; and we sincerely congratulate Professor Macalister upon having produced a work which we feel sure is destined to be a main factor in the advancement of scientific anatomy, and which will shed honour upon his own name and upon that of the school which is happy in the possession of so able a teacher and investigator.

But in so far as its object was to supply a student's text-book of anatomy, we fear we cannot consider that it has succeeded—in fact, we go further and say in its present form it can never, we think, be a student's manual, the chief reason being that the descriptions, particularly of difficult parts, are too brief, and not sufficiently intelligible for the use of any but the most advanced students. It is not sufficient to give students anatomy in outline, no matter how complicated and detailed that outline may be; they require to have it shaded in, fully and clearly, in order that there may appear no rude gaps, no great irregularities without accessible paths, no yawning chasms over which their developing intellects are unable to jump. We would make two suggestions—if we be forgiven for suggesting: change the form into that of a systematic anatomy, and fill in all the chinks and irregularities by more detailed descriptions, developing the work to twice its present size, and we believe the result will be one of the ablest and most readable anatomical text-books published.

4. This valuable and widely-known journal, founded by the late Ch. Robin, is now in its twenty-fifth year. It is unnecessary to say anything in praise of a periodical which has attained such an age, and which has never manifested any falling off in its matter. Under the present editorship of Pouchet and Duval new strength is shown, and the interest and variety of the papers are even greater than heretofore. The number before us, published last October, contains the following articles:—"The Placenta of Rodents," by Duval; a most interesting and valuable contribution to placental anatomy, illustrated by two lithographic plates; "On the Arterial Circulation in *Macacus cynomolgus* and *Macacus sinicus*, compared with that in Anthropomorphous Apes and in Man," by Rojecki; and a "Report to the Minister of Public Instruction on the work done in the Laboratory at Concarneau in 1888, and on the Investigations made there of questions relative to the Sardine," by Pouchet. There are also reviews of "Charrin's work on the

Pyocyanic Disease," and of "Dareste's Researches on the Physical Conditions of Evolution in Artificial Incubation."

The journal is handsomely printed, profusely illustrated, appears in six numbers yearly, and the subscription is 30 francs per annum.

Lectures on Nervous Diseases, from the standpoint of Cerebral and Spinal Localisation, and the later methods employed in the Diagnosis and Treatment of these Affections. By AMBROSE L. RANNEY, M.D. Philadelphia: F. A. Davis. 1888. Pp. 778.

THIS handsome and imposing volume differs materially in its plan from most of the text-books of nervous diseases which have been published in such numbers in recent years. It is divided into sections. The first deals with the anatomy, physiology, and pathology of the nerve centres. Dr. Ranney is well known by his valuable work on the "Anatomy of the Nervous System," and, as was to be expected, we find in the first section of the volume before us a remarkably good account of the anatomy of the brain and cord. The text is profusely illustrated with coloured drawings and diagrams, many of them original and of considerable ingenuity, intended to show the course of the different tracts of fibres, and the relations of the parts in the complicated structures of the nervous centres. The physiological and pathological deductions contain much that is of great value, and, taken altogether, in the first section a good foundation is laid for the study of the diseases which is to follow.

The second section is on the clinical examination of patients. This extends to 110 pages, and gives with the greatest minuteness and detail all the methods of examination necessary for a complete examination of the patient. It will be found full of important hints and directions, and its study cannot be too highly recommended to those commencing the treatment of cases of nervous disease. Nothing is so important in the examination of a case as a good method, and such may be got from this section. At page 116 the author gives a sample page of his own case-book, which will be found useful. We would call attention to the chapters on the examination of the eye, as being very exhaustive, and also to some ingenious instruments, as the dynamograph, p. 178, and the spring electrodes and diagnostic key-board for electrical testing, p. 191, *et. seq.*

The third and fourth sections treat respectively of the diseases of the brain and its membranes, and of the cord and its membranes. The descriptions of the different diseases are elucidated by very numerous drawings, most of which are coloured. Another feature is the large number of tables, giving, in easily comparable form, the points of resemblance and of difference between more or less related diseases. The weakest part of these sections is, in our opinion, the pathological anatomy. It would have been easy to find better drawings of the pathological histology of the nerve centres than those of Dr. Long Fox, which were never satisfactory, and are now quite out of date.

The fifth section is the most remarkable part of the work. It deals with the functional nervous diseases, the principal of which are—epilepsy, chorea, hysteria, hystero-epilepsy, neurasthenia, migraine, and neuralgia. In almost all cases of these diseases anomalies of the visual apparatus are found, consisting in errors of refraction and imperfections in the action of the extra-ocular muscles. The author, agreeing with Dr. G. T. Steevens, to whom this book is dedicated, looks on these anomalies as of prime importance, and discusses their nature, detection, and treatment at great length. He gives numerous cases in which, on the ocular defects having been rectified, the nervous manifestations disappeared; and, in fact, we are given to understand that the treatment of functional nervous diseases is primarily and mainly to be directed to the eyes. This view, which is very ably supported, will of course require much further examination before it can be definitely accepted. There can be no doubt, however, that even still too little attention is given to examination of the eyes in the study of nervous diseases, and Dr. Ranney will have done good service if he succeeds in directing greater attention to this important subject.

Section six is on unclassified and toxic nervous diseases, including hydrophobia, tetanus, multiple neuritis, lead paralysis, postero-lateral sclerosis or Friedreich's disease, &c.

The last section is on electricity in medicine. This subject is treated of at very unusual length. The physics of the subject are not given in a very scientific manner, but the descriptions of the apparatus are excellent. Perhaps this is best, as the less a physician knows of electricity, the greater is the confidence with which he will employ it in his practice.

The work concludes with a glossary of terms used in neurology,

a very large number of which are, we think, unknown in this country.

There is also a bibliography, arranged alphabetically under the authors' names, and a good index.

On the Motion of the Heart and Blood in Animals. By WILLIAM HARVEY, M.D. WILLIS's Translation, Revised and Edited by ALEX. BOWIE, M.D., C.M. London: George Bell & Sons. 1889. Pp. 147.

THIS volume, which forms one of Bohn's Select Library, is evidently intended to be read not only by medical men or by professional physiologists, but by the general public. It is to be hoped that it will serve to make the history of Harvey's great discovery more widely known than it has hitherto been. We fancy there are not very many who know the fanciful and fantastic notions which prevailed prior to the work of our great countryman, and there are perhaps even fewer who fully realise the magnitude and practical importance of the doctrine which he taught. As he says in his dedication, "The heart of animals is the foundation of their life, the sovereign of everything within them, the sun of their microcosm, that upon which all growth depends, from which all power proceeds." The knowledge of the functions of the heart is as fundamental in animal physiology as is that of gravitation in astronomy, or that of the principle of the conservation of energy in physics.

The account of how a great discovery such as this is made, the combination of reasoning and experiment on which it is established, cannot but have an interest for every educated mind. Whoever will read even a few pages of this book will find how erroneous is the idea, even still sometimes put forward, that the discovery of the circulation was made solely by reasoning from anatomical facts and not from experiment. It will be seen that Harvey experimented on living animals of many kinds, vertebrate and invertebrate, and that without these experiments the discovery could not have been made. Is it too unreasonable to expect that a juster public feeling may arise in the country of Harvey, when it is seen that at the present day the discovery of the circulation could not be made in England, but if we had a Harvey among us, he should go to France or Germany in order to prosecute his work?

Dr. Bowie has written a short but interesting sketch of Harvey's

life, and given a glossary of the technical terms found in the text for the use of non-professional readers. He has also admirably performed the work of revision and editing.

On the Physiology of the Vascular System: Three Lectures delivered at the Royal College of Surgeons. By MARK PURCELL MAYO COLLIER. London: H. K. Lewis. 1889. Pp. 53.

IN these lectures the author puts forward views which differ in many respects from those usually taught. They are founded partly and chiefly on reasoning, but partly on experiments on dogs. We must refer to the very readable work itself for the details of the argument, and confine ourselves merely to a statement of the principal conclusions arrived at.

In the first lecture it is maintained that the passage of blood from the auricles to the ventricles is mainly due to the aspirating force of the dilating ventricles. The closure of the auriculo-ventricular valves is not caused by the blood in the ventricles, but is chiefly due to the shortening of the muscoli papillares which begin to contract from the very commencement of the diastole, and by their contraction draw away the valves (or, as Mr. Collier calls them, the parachutes) from the ventricular walls, and approximate them to one another. The more distended the ventricle becomes the more unfolded and distended are the valves, and the more is the passage of the blood from the auricle impeded; finally, the auricle or auricular appendix contracts and completes the filling of the ventricles. The valves now are almost closed, and close completely when the ventricle commences to contract, and thus all regurgitation is prevented.

As soon as the pressure in the ventricle is greater than that in the aorta, the sigmoid valves open and the greater part of the contents of the ventricle are forced into the vessel, but distend immediately only the first part of it; this contracts and distends the next part, and so on until the distension reaches the periphery.

In the second lecture the function of the sinuses of Valsalva is discussed, and it is maintained that they are to prevent the possibility of the aortic valves lying too closely against the wall of the aorta, and so not being closed the moment the ventricle ceases to impel the blood into the vessels.

On the contraction of the auricles the author entertains very peculiar views—in fact, he denies that the auricle, as a whole,

contracts at all, and holds that the contraction is limited to the auricular appendix. The appendix is supposed to discharge its contents through the auriculo-ventricular valves, the current traversing the blood in the auricle proper without disturbing it or raising the pressure in the cavity.

It is held that neither auricle nor ventricle is ever completely emptied of its contents.

As to the sounds of the heart, it is contended that the second sound is not synchronous with and caused by the closure of the semilunar valves, but occurs subsequent to their closure, and is caused by their vibration consequent on the loss of support below due to the relaxation of the ventricle. It consequently marks, not the closure of the valves, but the diastole of the ventricle. The first sound is due to the muscular contraction of the ventricle, the sudden strain to which the closed parachutes are subjected during the rapid contraction of the ventricle, and possibly the sudden strain to which the aorta is submitted during the ventricular systole.

The third lecture deals with the phenomena of the pulse. The distension of the arteries is at first confined to that part in the immediate neighbourhood of the heart, and from this a wave of distension advances, each part recoiling and distending the one in front, but retaining for itself a portion of the blood. Any negative pressure in the aorta produced by the inertia of the blood is denied, and we think rightly. It is argued that when a segment of an artery contracts it will distend not only the part in front, but also that behind, and so that distension and redistension will alternate in any part so long as the tension of the vessel and the duration of the diastole will permit. To these are attributed the secondary elevations on the descending line of the sphygmographic curve.

Finally, there are some very original views as to the circulation in the liver. From the anatomical arrangement of the vessels of the abdomen, and from the very low pressure found experimentally in the portal vein, it is concluded that the systole of the ventricle "takes no part" in overcoming the enormous opposition to the flow of the blood in the capillaries of the liver. The chief factor in maintaining the portal circulation is held to be the diaphragm. This muscle grasps both liver and spleen, and compresses them every time it contracts. Indeed, this is the chief function of the diaphragm, whose respiratory function has been much exaggerated.

By applying to the thorax the formula for the capacity of a cone,

it is attempted to be shown that the capacity of the chest is increased more when the diaphragm is relaxed but the lower ribs raised and dilated, than when the diaphragm is depressed and the epigastrium protruded. From the fixed position of the central tendon of the diaphragm any considerable descent is impossible. Therefore the function of the muscle is considered to be rather circulatory than respiratory.

These lectures will well repay perusal. Although not the work of a professional physiologist, they contain much which will excite thought even if it fail to be accepted as proved. It is often useful to have the theories of professional circles overhauled and criticised by an outsider.

The Gulstonian Lectures on Secondary Degenerations of the Spinal Cord. Delivered at the Royal College of Physicians, March, 1889, by HOWARD H. TOOTH, M.D. London: Churchill. 1889. Pp. 71.

In these Lectures Dr. Tooth gives the results of a large number of observations which he has made, partly on human cords, partly on the cords of monkeys who had been submitted to sections either of the cord itself or of nerve roots. The work being full of detail, it would not be possible for us to give within our space a complete *résumé* of the author's conclusions. We must limit ourselves to a few of the more important points, referring all our readers who are interested in nervous pathology to the Lectures themselves, which will be found to contain abundance of suggestive and important matter.

In the first lecture the histology of secondary degeneration is treated of. The differences between the degeneration of the fibres of the cord and that of the peripheral nerves (the so-called Wallerian degeneration) are well defined. A distinction is drawn between the chemical and the histological changes in the degenerating tracts, and it is shown that while a fibre, when separated from its centre, undergoes the early chemical changes simultaneously in its whole length, the histological changes travel along the nerve fibre at a varying rate.

A peculiarity of the degeneration in the cord of monkeys, following section of the roots, and not observed after sections of the cord itself, or in the cords of men, is the number of small round nuclei scattered over the section, especially in the lines of connec-

tive-tissue trabeculæ dipping in from the thin sheath which surrounds the cord.

Tertiary degenerations, as described by Langley and Sherrington, were not noticed.

No attempt at regeneration of degenerated fibres was ever seen, and it is doubted whether it ever occurs.

In the second and third lectures the course of the degenerated tracts is traced.

It was found in men that the crossed pyramidal tract extends lower than is often stated. Degenerated fibres could be traced as far as the fourth lumbar nerve. The direct pyramidal tract was traced as low as the second lumbar nerve. It was impossible to follow this tract to its termination. The complete absence of degenerated fibres in the anterior commissure makes its commonly assumed decussation improbable.

In the postero-lateral column there is a tract which on sections appears comma-shaped, and which degenerates downwards. It was first described in 1883 by Schultze. Dr. Tooth finds this tract almost constant. It is more distinct when the lesion is high up, above the fifth dorsal root. The function of its fibres is unknown, but it is probably commissural.

Of the tracts which degenerate upwards, those in the posterior columns are first considered. From the appearances following injury or experiment, the following conclusions are drawn as to the course of the fibres of the posterior nerve-roots in the cord:—In the lower part of the cord most of them pass into the postero-lateral column, although some directly enter the gray matter of the posterior horn. In the postero-lateral column they run for only a short distance, and then pass into the gray matter of the posterior horn, or into the posterior median columns. In the gray matter they enter into connexion with the posterior vesicular columns and with the cells of the anterior horn. In the posterior median column they pass up to the medulla and terminate in the nucleus gracilis. Although, on clinical grounds, a decussation of the fibres of the posterior roots is probable, this has not been satisfactorily traced by the microscope.

The direct cerebellar tract is the subject of some very interesting observations. The lowest origin of its fibres is between the ninth and eleventh dorsal roots. It is unaffected if the lesion is below this point. The constitution of the tract is different in the upper and lower parts of the cord. In the former it contains

chiefly large nerve-fibres, and these are evidently derived in great part from the posterior root-fibres of the upper dorsal and cervical nerves. After section of these roots the tract shows degeneration, while no degeneration follows section of the roots of the lower nerves. In the lower part the fibres of the tract are chiefly or entirely of the fine variety. In section of the cord low down the secondary degeneration of the tract is slight, and does not extend very far from the lesion.

The fibres at the peripheral portion of the lateral tracts at the lower dorsal region are, therefore, probably descending fibres, and it is believed that they communicate with the cells of Clarke's columns, and that these communicating fibres are those which have been so often described as crossing the lateral columns. It is only, therefore, in lesions of the cord or posterior roots high up that extensive ascending degeneration of the direct cerebellar tract occurs. The degeneration can then be traced to the restiform body and cerebellum of the same side.

Gowers' antero-lateral ascending tract is easily distinguished from the direct cerebellar tract below, but above, the distinction is not always so easy :—

"The true cerebellar tract consists of large fibres, the antero-lateral principally of small. The direct cerebellar tract derives its fibres from the posterior roots, the antero-lateral from the gray matter of the cord, or at any rate *not* from the posterior roots. A transverse lesion of the cord high up, say lower cervical, will show degeneration of both antero-lateral and direct cerebellar tracts, but there will be a joining of the two areas, with the result of a strip of degeneration occupying the whole arc of the periphery of the lateral region. The further down the cord the lesion is, the less the cerebellar tract element will be, and the more distinct will be the severance between the antero-lateral and direct cerebellar tracts, till at last a point is reached, below the ninth or tenth dorsal, at which the direct cerebellar tract is not degenerated at all, but the fibres in its position are all descending fibres from the crossed pyramidal tract, and the ascending antero-lateral is affected only."

The upward course of the antero-lateral tract is traced through the lower part of the medulla oblongata, and reasons are given for connecting it with the cells of the nucleus lateralis, although this connection was not certainly demonstrated.

Finally, the distribution and course of the fine nerve-fibres in the cord is considered. These are, since the remarkable work of Gaskell, looked on as belonging to the visceral system. The

descending fibres are chiefly contained in the crossed pyramidal tracts, while the ascending are numerous in Gowers' tract, that of Lissauer which surrounds the substantia gelatinosa of the posterior horns, and in the postero-median column, in which tract they seem to run through the cord without entering into connection with the gray matter.

The text of these valuable lectures is illustrated with many well-executed drawings. The printing is not satisfactory. In many places words are dropped out or misplaced, so as sometimes to make the meaning difficult to seize.

COMPRESSED AND RAREFIED AIR IN LUNG DISEASE.

DR. SOLOMON SOLIS-COHEN (*New York Med. Journal*, Nov. 23, 1889) describes an apparatus for the therapeutic use of compressed and rarefied air. He claims that inhaling compressed air and breathing into rarefied air increases the vital capacity, effete matters are expelled from the lung, forced feeding is better borne, and the whole condition of phthisical patients is improved. He recommends the inhalation of compressed air in spasmodic asthma, and breathing into rarefied air in asthma with emphysema.

EXTIRPATION OF THE COELIAC PLEXUS.

DR. A. LUSTIG (*Deutsche med. Zeit.*) extirpated successfully the coeliac plexus from a number of dogs and rabbits. He found that the loss of the plexus produced no effect on digestion, the appetite remained good and the stools natural. Some time after the operation, temporary glycosuria which never exceeded two days in duration was noticed. The one constant symptom was acetonuria; from this the animal usually recovered, but when death did result it proceeded from the coma of acetonuria.—*La France Médicale*, Nov. 26th, 1889.

KERATOHYALIN AND PIGMENT.

MERTSCHING concludes, from a histological examination of normal and diseased skin, that the keratohyalin is derived from a degeneration of the nuclei of the epidermic cells, and that in many cases pigment is only keratohyalin in a fine state of division. For details we must refer to the original paper, which is illustrated by a good plate.—*Virchow's Arch.* Bd. 116. 1889.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.
General Secretary—W. THOMSON, M.D.

SECTION OF PATHOLOGY.

President—E. H. BENNETT, M.D.
Sectional Secretary—J. B. STORY, F.R.C.S.I.

Friday, November 29, 1889.

The PRESIDENT in the Chair.

Renal Calculus.

MR. KENDAL FRANKS read a paper on a renal calculus, with the nucleus formed by an ordinary sewing needle, which had been swallowed many years previously.

The PRESIDENT said it was not merely the presence of phosphate of calcium but the predominance of carbonate of calcium that characterised calculi in suppurating kidneys. But calculi of this character passing away in the urine were suggestive of suppuration rather around the kidney than originating in it. They knew that calculi originating in the kidney, apart from suppuration, were more likely to consist of oxalate of calcium or lithic acid. A noteworthy point in Mr. Franks' case was that the urine appeared to have been normal. He did not know whether the slow process of oxidation was likely to take place in any needle introduced into the body, because as soon as a needle was introduced into any tissue the needle would, in a few hours, become covered with a gloss which was not very easy to describe—a kind of composition like varnish which perfectly prevented oxidation.

MR. FRANKS, in reply, said it was remarkable that all the stones which had come surgically under his notice in connection with kidneys had the same composition—viz., phosphate of calcium mixed with small quantities

of carbonate of calcium. In the present case the phosphatic compound formed 90 per cent. of the entire calculus. The present specimen was the more interesting, because formerly they found it stated in text-books, and it used to be taught, that stones in the bladder were composed chiefly of oxalates and urates, and that renal calculi, which were formed in the kidney and had a phosphatic deposit, received it from the bladder.

United Fracture of the Base of the Skull.

The PRESIDENT exhibited a united fracture of the base of the skull involving the anterior and middle fossæ. The injury which caused the fracture was a fall from a car during an epileptic fit.

The man had long suffered from epilepsy, and had sustained many injuries by falling when seized with convulsions. Among these was a transverse fracture of the patella, which the President submitted to the Section in its last Session in consequence of the exceptional derangement of the structures of the knee which it presented.

Having detailed the symptoms observed during the fatal illness, which resembled those of Jacksonian epilepsy, the President stated the grounds on which he had declined to interfere surgically with the patient. The *post-mortem* examination disclosed a united fracture of the frontal region radiating to the base along the middle line, and the changes observed in connection with it were clearly seen to have no causal relation to the epilepsy. This was verified by reference to the history of the case.

Referring to the details of the fracture, the President noted the great rarity of such specimens, quoting some of the few recorded examples in support of this view. This rarity of specimens, he stated, was due to the amount of force which is necessary to produce fractured base which inflicts great injury on the brain, and to the fact that almost all such fractures are compound either by external wound, or more frequently by opening the nasal and aural cavities, and are so specially prone to be complicated by inflammation.

DR. MYLES said the case was of extreme interest in connection with the diagnosis of internal lesions of the brain. Was it possible to diagnose epilepsy of the functional form, which was unconnected with organic lesions of the brain, from the so-called Jacksonian epilepsy? From an analysis of the present and several other cases he had observed, he (Dr. Myles) concluded that localisation of cerebral lesions by analysis of the external symptoms in question was practically an impossibility.

MR. FRANKS said Dr. Myles appeared to be entirely sceptical on the subject of cerebral localisation. In the case now before the Section the localising symptoms were practically *nil*. All those who had had large experience of such cases were agreed that once the convulsions became general it did not matter whether the head turned to the right or the

left, or the eyes towards the right or left; these signs gave no indication whatever as to the position of the lesion. The possibility of diagnosis wholly depended on the first symptom, or twitch; and it was often extremely difficult to find it.

The PRESIDENT, in reply, reminded Mr. Franks that the whole drift of his case was that the man had been epileptic for a great number of years, and that while he had accidentally got fractures and lesions, none of them had anything to do with the epilepsy. They did not know what caused the epilepsy. The man had albuminuria.

A Contribution to the Pathology of Joint Bodies.

DR. R. G. PATTESON read a paper on the pathology of joint bodies. The obscurity involving the pathology of loose bodies in joints is shown by the manifold theories to which they had given rise. Excluding foreign bodies, various authors had enumerated the following varieties—fibrinous, lipomatous, fibrous, fibro-cartilaginous, cartilaginous, osteo-cartilaginous, osseous, traumatic, and necrotic. The specimen exhibited was removed by Mr. M'Ardle from the knee-joint of a young man aged twenty-four. Eight years previously a small body appeared on his knee; it lay to the inner side of the ligamentum patellæ, and as it continued growing and giving rise to attacks of pain, three years ago he dislodged it into the joint in the hope of relief. It was then the size of a bean, and found a resting-place in the supra-patellar pouch. As it continued to increase in size he was admitted to St. Vincent's Hospital, under the care of Mr. M'Ardle, who removed it. The patient made a good recovery. The body was found to present an irregularly-oval shape, reminding one of a small patella. It had one surface entirely cartilaginous, and one composed of a bony centre surrounded by a marginal collar of cartilage. Its length was 28mm., its breadth 22mm., its thickness 11mm. A median section showed it to be made up of an oval bony nucleus, covered on one side by a crescentic disc of cartilage. The exposed bony surface showed distinct patches of rheumatism. No traces of attachment, or of a pedicle, could be detected. Microscopically the cartilage resembled diarthrodial cartilage, except in possessing a more actively proliferating middle zone; it was covered by a cellular fibrous envelope, resembling the reflection of the synovial membrane, which also filled the depressions on the bony surface. The bone was of cancellous type, the trabeculæ, however, being denser than normal. Fibrous metaplasia of the medulla and cartilaginous transformation of the bone occurred in parts. Two points chiefly suggested consideration—the mode of origin and the mode of growth of these bodies. Attention was directed to the valuable researches, pathological and experimental, of MM. Poulet and Vaillard, who found that the majority of loose bodies corresponded in structure with the osteophytes formed in chronic

rheumatic arthritis, which had become separated either by fracture or by a pathological process. Arguments in favour of this causal relationship were advanced from various sources, and the question of increase of size after complete liberation in the joint was discussed. The conclusions arrived at were summarised as follows:—

1. In the majority of cases loose bodies of mixed bony and cartilaginous nature are *wandering osteophytes*, and are evidences of a latent rheumatic arthritis.

2. This form of chronic rheumatic arthritis is insidious and latent in character, occurs in young persons as well as in those more advanced in years, and is chiefly manifested in “lipping” of the articular margins, and in the formation of *ecchondroses* and *osteophytes* which, while attached, cause no symptoms.

3. These bodies, after liberation in the joint, may, and do often, undergo considerable increase in size, their nutriment being derived from the synovial fluid. This fact points to the necessity of their early removal by operative interference.

The PRESIDENT said he was glad to find the opinion of the late Mr. Adams, that foreign bodies in joints were mostly of rheumatic origin, was now being confirmed by the elaborate microscopical researches of the day, which were not made in Mr. Adams' time.

MR. FRANKS said there had recently been great discussion in London as to whether it was not possible for bodies of this sort to be formed by the chipping off of little pieces from the articular cartilages. The body shown this evening bears a strong family resemblance to the articular cartilage, having regard to the arrangement of the cells.

DR. MYLES said he found difficulty in understanding how the synovial fluid could have afforded pabulum enough not only for the maintenance of the cartilage but for the development of this piece of bone.

DR. PATTESON, in reply, said his attention had been directed to the subject by a paper of Dr. Humphry, of Cambridge, and after examining the records of the cases he came to the conclusion that what had, in a great many instances, been regarded as fragments of articular cartilage or bone, chipped off by injury, or exfoliated by a process of necrosis, were in reality detached *osteophytes*. The matter was concluded by the experiments of two French writers, who had examined these bodies, and had found that the mode of production in all was similar. First, there was an excessive development of the articular cartilage in a localised spot; secondly, a development of bone took place which was connected by slender trabeculæ with the cancellous tissue of the shaft; and then when a fracture occurred they had the loose *osteophyte*. He did not attempt to explain the growth of such bodies in the synovial fluid.

The Section then adjourned.

SECTION OF MEDICINE.

President—**LOMBE ATTHILL**, President of the King and Queen's College of Physicians.

Sectional Secretary—**A. N. MONTGOMERY**, M.K.Q.C.P.

Friday, December 13, 1889.

DR. JAMES LITTLE in the Chair.

Extra-pleural Abscess simulating Empyema.

DR. WALTER G. SMITH read a paper on the above subject. [It will be found at page 118.]

The **CHAIRMAN** said he had, at the instance of Dr. Smith, seen the case in question at an early period of the patient's illness. The structure over one of the ribs was slightly swollen, and there being very distinct tenderness on pressure, he concluded that there was disease of the rib itself—disease perhaps of only one rib then. He doubted that the diagnosis could have been more precise and accurate than that which Dr. Smith had made.

DR. JOHN WILLIAM MOORE desired more information as to the distribution of the dulness on percussion over the right side of the chest, because in the text-books there was a distinction drawn between the arched dulness on percussion, due to the liver being displaced upwards, and the very horizontal line caused by any form of fluid effusion into the pleura. Thus Dr. Walter Smith had not indicated whether the dulness on percussion changed with the position of the patient—a circumstance which was a recognised factor in the diagnosis of intra-pleural effusion. The free evacuation given to the contents of the foetid abscess by the drainage-tube might account for the intact nature of the skin. It was only when there was pressure that the skin began to undergo dermatitis, shown by the œdema and discoloration.

DR. R. A. HAYES remarked that though in ordinary cases of pleurisy with effusion the line of dulness was to some extent horizontal, yet in those of people lying for some time in bed, after the occurrence of the pleuritis, a certain amount of adhesion took place round the edges of the pleura, and the fluid became encysted; so that the position did not afford much assistance in diagnosis, but, on the contrary, was rather illusory.

The **CHAIRMAN** considered it would have been worth while to have taken the three ribs away, having regard to the good results which he had himself several times observed from the removal of ribs in empyema; but of course he could only say now, in the light of the *post-mortem* examination, what might have been done.

DR. WALTER G. SMITH, in reply, said the dulness extended posteriorly to the level of the angle of the scapula and anteriorly to that of the lower border of the fifth rib. He regretted that the bolder course had not been adopted, not because it would certainly have saved the patient's life, but because it might have afforded a better chance of recovery. Two reasons deterred him from taking that course—namely, uncertainty as to the seat of the abscess, and the fear arising from the fœtid, gangrenous nature of the discharge, that any excision of the ribs would be a certain avenue to septicæmia.

Case of Empyema treated by the Radical Method.

DR. R. A. HAYES read notes of a case of empyema treated by the radical method. The patient, who had been shown at the last meeting of this Section, was a constabulary recruit, and Dr. Hayes mentioned the comparative frequency with which large effusions occurred in these men, often coming on without pain or other usual symptoms. The case recorded was suspected to be tubercular, there being severe hectic and wasting, but no tubercular bacilli could be detected in the sputum. The fluid had remained serous for three months, and then became purulent. When a free incision was made by Mr. Hamilton, the patient at once improved, lost his fever, gained weight, and was now quite convalescent.

Dr. Hayes commented on the advantage of having the assistance of a competent surgeon to make these incisions, especially in long-standing cases.

Fleet-Surgeon FRENCH MULLEN said, as to the frequency of pleuritic effusions in Irish Constabulary recruits, he had not found any undue proportion in recruits in the Navy and the Royal Marines, of whom he had had an extensive experience, and yet the training which they must undergo was at least as severe as that of the Constabulary recruits. No doubt it might be that the extensive motions to develop the chest muscles might have some effect in generating the disease. He asked why Dr. Hayes did not tap his case whilst in the first stage of pleuritic effusion, instead of waiting till it had taken on suppurating. Where he found ordinary medical treatment fail, and the case became in a measure chronic, he aspirated with considerable success. It was not necessary to make more than one opening. He had found an oakum pad useful.

MR. F. T. HEUSTON said he had had, chiefly owing to the Chairman's kindness, operated in a great number of cases of empyema, and he thoroughly concurred in Dr. Hayes' remark that the physician should have a surgeon to perform the operation. In a great number of cases of empyema he did not consider an incision necessary, but in those in which it was necessary it was of prime importance that the proper place should be selected. Many of the text-books indicated the 5th or 6th

intercostal space, mid-axillary line or thereabouts, as the proper position; but in his opinion that was bad surgery, as free drainage would be impossible. The patient would not lie on the wounded side, and there would remain below the wound a cavity in which pus would collect and probably decompose. He preferred to make the incision in the scapular line or posterior to it, as low down as possible, selecting the eighth intercostal, but keeping above the diaphragmatic attachment to the ribs, this being the most dependent position and allowing the most satisfactory drainage. Next in importance to the place of incision was the necessity of having free drainage for a lengthened period. He did not believe in the theory usually laid down, that upon opening into the pleural cavity, or if an empyema entered into the pleural cavity, it could heal only by granulations springing up and adhesions as the necessary consequence, and particularly in children in whom one tapping of an aspirator would cure. Though a part would heal by granulation, it would be impossible for a large cavity like the pleural to become adherent universally and obliterated at once by granulation. He agreed with Dr. Hayes in thinking that irrigation should be used only when necessary, instead of as a regular means of treatment; but he did not find a solution of carbolic acid, which Dr. Hayes used, the best for the purpose. He had tried and he preferred permanganate of potassium or a solution of boric acid. Irrigation as regular treatment was a mistake. The question of removal of ribs depended on the particular case. If the lung was collapsed in chronic cases and would not expand, and the pus had been there for a lengthened period, he did not see how the cavity would close unless the chest was allowed to collapse by the removal of one or more of the ribs. In such cases it had been his habit to examine with the electric light the condition of the lung through the drainage-tube opening, or if there was no evidence of the lung expanding after a fortnight of free drainage, he removed a sufficient number of the ribs.

DR. A. W. FOOT suggested that the case was one of empyema from conversion, and that repeated examinations with the hypodermic syringe had turned what was a serous effusion into a purulent one. Unless the syringe was made aseptic it would be difficult to show that that was not the result, coupled with the admission of air. In the treatment of pleural effusion he had been taught that the patient should be allowed to be on the verge of death before resorting to a surgical operation. What he did in such cases was to draw off the pus with an aspirator, wash out the pleura, using a warm solution of iodine, but never anything else, unless fœtor arose as the indication for special treatment. Cases of excision of the ribs he had seen generally die of pyæmia.

DR. PATTESON thought there was too great a tendency on the part of surgeons to rush in and open the pleural cavity with a knife and stick in a drainage tube as big as his thumb. One of the largest cases of pleural

effusion he had seen was cured by a single aspiration. As regards the necessity of removing the ribs, a great many cases got well after drainage without such a course, but a great many others did not get well. The healing took place by the union or adhesion of two granulating surfaces. Surgical interference was no doubt beneficial in those cases where the lung had undergone such serious changes as to be incapable of expanding.

DR. WALTER G. SMITH concurred in Dr. Patteson's view of the pathology of healing. It was only comparatively recently that reasonable views of treatment prevailed. Billroth, one of the best authorities in Europe, had recorded a series of cases which he treated, and the result of his experience was unfavourable to the radical cure. The empyema cavity had three sides, and it was impossible to close it except these met either by the expansion of the lung, or by the falling in of the chest, or by the rising of the diaphragm. There must always be a large margin of unsuccessful cases of empyema. It should be remembered that the first who taught the profession to deal differently with those cases was not a surgeon but a physician—the celebrated Dr. Trousseau, of Paris, who popularised paracentesis of the chest. Simple aspiration would cure a small proportion of cases of purulent collection in the pleura, and it was not waste of time, therefore, to aspirate before proceeding to the so-called radical method.

MR. HEUSTON said Drs. Patteson and Smith had stated exactly the view which he held and intended to convey—namely, that the closing up was by granulation; but in cases of collapse, when the ribs were removed, there would be two sides to come together—the diaphragm coming up and the chest wall going in.

MR. DOYLE believed that one of the most important physical signs in the recognition of pleuritic effusion was the tactile sensation by the finger on percussion. In his own cases he always took antiseptic precautions when “tapping” the chest.

The CHAIRMAN entertained no doubt that under the new method there were more recoveries than under the old, and that the additional surgical means of rescuing patients from death, immediate or remote, placed the physician in a better position than ever. The difficulty was to hit the proper medium—neither to be too timid on the one hand nor too rash and eager on the other. Without expressing any opinion on the truth of Dr. Foot's criticism as to the possibility of the punctures converting the serous into a purulent effusion, nobody could be too cautious in introducing even a small needle of a syringe into the pleural sac. He never did so himself without heating the needle in a spirit lamp and afterwards anointing it with carbolic oil, and he always used a fresh needle. It was not desirable to introduce a needle into the chest more frequently than could be avoided; but he had to reproach himself more for abstaining from rather than using it too frequently, as he believed that with proper

precautions it could be used without danger. He agreed with Dr. Hayes as to the propriety of having the assistance of a competent surgeon.

DR. R. A. HAYES, replying, said he always tapped himself where that operation sufficed, and he was scrupulously careful about the condition of the aspirator and of the needle in making diagnostic punctures. But he drew the line at the scalpel, and felt it right, where it came to the use of the knife, to call in an operating surgeon. His action in connection with the case in question had nothing to do with producing the purulent effusion. As regards the naval and marine recruits being more impervious to the disease than the constabulary, perhaps the explanation was that the naval recruits were drawn more from the tougher toilers of the towns. He did not tap in the early stage of the case the effusion was so small, and the fluid, being considerably diffused, was not causing pressure on the liver so as to call for surgical interference. Save in an exceptional case, he never found it necessary to make more than one opening. He agreed with Mr. Heuston's excellent remark that the incision should be made as far back and low down as possible. Mr. Heuston, Dr. Smith, and Dr. Patteson were rightly agreed as to the method by which the cavities healed up and became obliterated. Where healing would be assisted by excision of the rib it ought to be done to promote rapid cure. In one of the largest cases which he tapped the pus never again appeared, and the patient recovered; but, on the other hand, over and over again he tapped purulent effusions with disappointment—he had ultimately to adopt the radical treatment.

The Section adjourned.

SECTION OF OBSTETRICS.

President—S. R. MASON, M.B., F.R.C.S.I.

Sectional Secretary—ANDREW J. HORNE, F.K.Q.C.P.

Friday, December 20, 1889.

The PRESIDENT in the Chair.

Exhibitions.

The PRESIDENT exhibited a small ovarian cyst, which he removed on December 11, 1889, in the Coombe Hospital from a woman aged thirty-five years, who had been married for twelve years and a widow for the last year. It was doubtful whether she had ever been pregnant. The woman made a perfect recovery.

DR. MACAN exhibited a specimen of cancer of the ovary, removed from a woman, aged forty-one years. At the operation a diagnosis of

carcinoma was made, the pedicle of the cyst being felt to be a hard mass, which extended over the surface of the omentum and other intestines. On a *post-mortem* examination the liver was found to be covered with a carcinomatous infiltration. This, however, had not gone very far down, the chief mass being close to the pedicle. The part which he tied after the operation was extremely hard. The case was interesting because the recovery was almost a perfect one except that the woman died. On the night after the operation her temperature was 101°, and it afterwards became normal, though on one evening it was 100°. Her death took place on the fourteenth day after the operation.

The PRESIDENT exhibited a large fatty tumour, which he removed on the Friday preceding in the Coombe Hospital from an unmarried woman aged twenty-five years. It grew from the ischio-rectal fossa, and he removed it from the perinæum and left labium. The woman was now practically recovered.

MR. O'CALLAGHAN exhibited a papillomatous cyst, which he removed from a young girl aged twenty-four.

Notes and Remarks on a Case of Complete Prolapse of the Cervical Zone of the Uterus preceding Labour at Full Term.

The PRESIDENT having resumed the Chair, the adjourned discussion on Dr. F. Kidd's paper, read at the preceding meeting, entitled "Notes and Remarks on a Case of Complete Prolapse of the Cervical Zone of the Uterus preceding Labour at full term," took place. [The paper will be found in the Number of this Journal for January, 1890, page 1.]

Dr. MACAN said that while they were indebted to Dr. Kidd for having brought the subject forward, he thought that the terms used in the paper were confusing and inaccurate. There was a certain amount of confusion as to what was meant by "prolapse of the cervical zone." In the first case mentioned in the paper the woman did not appear to have had any prolapse of the uterus. He thought that what she had was œdema of the cervix. As to the second case, it was more likely to have been one of rigid os than anything else. He thought the term "scirrhus," which had so generally a malignant import, was inapplicable in a case that had nothing to do with malignant disease. With reference to the fourth case, the best authorities entirely doubted the possibility of the uterus going on to the full term, and the woman being delivered in the position described. It was most improbable that in a case of total prolapse the woman could have gone on to the full term and been delivered. As to treatment there was very little doubt as to what it should be. Where prolapse occurred in the earlier months of pregnancy the treatment was replacement and retention in the proper position. When there was hypertrophy of the cervix not much good was done by replacement. There was one condition of prolapse which Dr. Kidd had hardly noticed,

and that was, where the whole uterus became incarcerated in the pelvis—a state of things which at times led to a fatal result. He did not know that in these cases there was any great difficulty in knowing what were the indications of treatment.

DR. BAGOT said the first case mentioned in the paper was not one, the conditions of which had been previously unknown. Dr. Mierachi, of Salonica, described the affection as “acute elongation of the cervix.”

Dr. KIDD said that the pelvis in the second case was rather small, but he had not given any measurements. From the character of the labour there did not seem to be anything to indicate that the pelvis was very small.

DR. ATTHILL said the subject Dr. Kidd had brought before them included cases of very different forms of prolapse. He had attended to cases in which there had been true hypertrophy of the lower segment of the uterus prior to pregnancy, and also to cases in which no such hypertrophic condition of the lower segment of the uterus existed, prior at least to pregnancy. The former class of cases, in which a true hypertrophic condition of the lower portion of the uterus existed, and in which pregnancy occurred, were, as far as his experience went, exceedingly rare. He had, in practice, met several cases of great elongation of the lower portion of the uterus. In one of these cases, that of an unmarried woman, he amputated the cervix; in another he destroyed a large portion of the cervix with caustic potash. He had never seen pregnancy to occur in cases of true hypertrophy of the lower section of the uterus—he meant where the hypertrophy had existed for some time previous to the possibility of pregnancy occurring.

DR. A. J. SMITH said the first case mentioned in the paper was the most interesting to him, as he had seen an almost similar one in the Rotunda Hospital. After replacement the labour progressed without trouble, and there was no second prolapse. He therefore called Dr. Kidd's first case acute œdema of the cervix.

The PRESIDENT said he hardly thought that in the case related by Dr. Kidd œdema alone, without descent of the uterus, would account for the large amount of uterine tissue that was found without the vulva.

DR. KIDD replied.

Observations on Treatment of Congenital Absence of Vagina.

DR. MORE MADDEN read a paper entitled “Observations on Treatment of Congenital Absence of Vagina.”

The PRESIDENT said he had seen only one case of vagina congenitally absent. The case was similar to that which Dr. More-Madden had described.

MR. O'CALLAGHAN said he would prefer to remove the ovaries and tubes in such cases.

DR. MACAN said he had seen only two cases, one of complete and the other of incomplete absence. The cases in which the uterus was found, differed from those in which there was no uterus at all.

MR. DOYLE remarked that Dr. More Madden had not drawn attention to the anatomical relations of the parts where this abnormality occurred.

DR. MORE MADDEN replied.

The Section adjourned.

SEWAGE IN WATER-SUPPLY.

A COMMITTEE on pollution of water-supplies, appointed by the American Public Health Association, calls special attention to the danger of sewage contamination of drinking-water, in connection with enteric fever. While ordinary organic matter may be transformed into innocuous substances by aeration in running-water, there is no reason to suppose that the specific germ of enteric fever undergoes elimination by this means. Statistics are produced in evidence of the direct relation between the prevalence of this disease and sewage pollution of the water-supply. Thus Brooklyn, whose water is uncontaminated, has but 15 deaths per 100,000 from enteric fever, and these are attributed to indirect infection and other local causes; New York, which "exercises great care in the exclusion of sewage," has 25; Boston, with a larger infusion of sewage, 40; Cincinnati and Philadelphia, with a still higher degree of contamination, have a correspondingly increased mortality from enteric fever. The mortality from this disease in Baltimore is steadily decreasing since the introduction of a pure water-supply. The same is true of New Orleans, although it appears to have no system of sewerage. In Vienna, from 1850 to 1874, with water from wells and the river, the enteric mortality ranged from 100 to 340 per 100,000, falling to 50 and then to 11 after the introduction of pure water. A remarkable experiment was tried in 1877, when severe frost cut off some of the sources of supply, and Danube water was pumped into some of the mains, with the result of sudden increase in the number of cases of enteric fever in the parts of the city so poisoned. It is asserted that a case of this disease is now a medical curiosity in Vienna.

ANTISEPTIC DRESSINGS.

THE business of Mr. John Milne, Ladywell, London, manufacturers of antiseptic dressings, is about to be converted into a limited company. We understand that the great increase in Mr. Milne's business, owing to the strides antiseptic surgery has made in recent years, renders this change necessary. Prospectuses can be obtained on application to Mr. Milne's Irish agents, Fannin & Co., 41 Grafton-street, Dublin.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.;
F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, December 28, 1889.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.		Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.
Armagh -	36.1	25.8	5.2	20.7	Limerick -	16.2	22.9	21.6	25.6
Belfast -	31.6	29.7	30.9	35.0	Lisburn -	19.3	29.0	14.5	9.7
Cork -	27.3	20.8	14.9	15.6	Londonderry	37.4	32.1	30.3	26.7
Drogheda	8.5	25.4	29.6	33.8	Lurgan -	15.4	25.7	35.9	10.3
Dublin -	27.3	31.8	32.6	24.4	Newry -	17.6	24.6	21.1	0.0
Dundalk -	21.3	13.1	48.0	21.8	Sligo -	24.1	19.2	38.5	38.5
Galway -	26.9	20.2	50.4	13.4	Waterford -	20.3	23.2	25.5	18.5
Kilkenny	12.7	12.7	33.8	16.9	Wexford -	8.6	17.1	8.6	17.1

In the week ending Saturday, December 7, 1889, the mortality in twenty-eight large English towns, including London (in which the rate was 20.2), was equal to an average annual death-rate of 21.5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23.9 per 1,000. In Glasgow the rate was 25.2, and in Edinburgh it was 26.3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 27.0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3.6 per 1,000, the rates varying from 0.0 in ten of the districts to 6.8 in Belfast. The 139 deaths from all causes registered in the last-named district comprise 13 from measles, 4 from whooping-cough, 1 from simple continued fever, 7 from enteric fever, and 5 from diarrhoea. Among the 42 deaths from all causes

registered in Cork are 1 from diphtheria and 2 from enteric fever. The 12 deaths in Limerick comprise 2 from scarlatina, and the 21 deaths in Londonderry comprise 3 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 236—126 boys and 110 girls; and the deaths to 188—101 males and 87 females.

The deaths, which are 20 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 27·8 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 27·3 per 1,000. During the first forty-nine weeks of the current year the death-rate averaged 25·4 per 1,000, and was 3·3 under the mean rate in the corresponding week of the ten years 1879–88.

The number of deaths from zymotic diseases registered is 28, being 2 over the average for the corresponding week of the last ten years, but 6 under the number for the week ended November 30. The 28 deaths comprise 2 from measles, 1 from typhus, 3 from whooping-cough, 1 from diphtheria, 11 from enteric fever (being 2 over the number of deaths from that disease in the preceding week), 3 from diarrhoea, &c.

The number of cases of enteric fever admitted into the principal Dublin hospitals in which cases of infective disease are treated is 24, being 3 under the admissions for the preceding week; 29 enteric fever patients were discharged, 2 died, and 181 remained under treatment on Saturday, being 7 under the number in hospital on Saturday, November 30. Returns furnished by the authorities of six hospitals not included in the above, and from which statistics have not heretofore been received, show that there were in those institutions on Saturday, December 7, 37 cases of enteric fever, of which 2 were admitted during the week.

Four case of typhus were admitted to hospital, against 2 for the preceding week. Nine cases of this disease remained under treatment in hospital on Saturday.

The hospital admissions for the week include also 5 cases of measles, but no case of scarlatina was received. Thirteen cases of measles and 3 of scarlatina remained under treatment in hospital on Saturday.

Forty-five deaths from diseases of the respiratory system were registered, being 5 over the number for the preceding week, but 6 under the average for the forty-ninth week of the last ten years. They comprise 31 from bronchitis, 7 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, December 14, the mortality in twenty-eight large English towns, including London (in which the rate was 21·0), was equal to an average annual death-rate of 23·1 per 1,000

persons living. The average rate for eight principal towns of Scotland was 23·6 per 1,000. In Glasgow the rate was 26·6, and in Edinburgh it was 23·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 28·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·7 per 1,000, the rates varying from 0·0 in eleven of the districts to 10·7 in Londonderry—the 18 deaths from all causes registered in that district comprising 4 from whooping-cough and 2 from scarlatina. Among the 131 deaths from all causes registered in Belfast are 14 from measles, 1 from whooping-cough, 4 from simple continued fever, 3 from enteric fever, and 2 from diarrhoea. The 17 deaths in Limerick comprise 1 from scarlatina and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 173—92 boys and 81 girls; and the deaths to 218—104 males and 114 females.

The deaths, which are 1 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 32·2 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 31·8 per 1,000. During the fifty weeks of the current year ending Saturday, December 14, the death-rate averaged 25·6 per 1,000, and was 3·2 under the mean rate in the corresponding week of the ten years 1879-88.

Only 18 deaths from zymotic diseases were registered, being 11 below the average for the corresponding week of the last ten years, and 10 under the number for the week ended December 7. They comprise 2 from measles, 1 from influenza, 3 from whooping-cough, 6 from enteric fever (being 5 under the number of deaths from that disease in the preceding week), 2 from diarrhoea, &c.

During the week 25 cases of enteric fever were admitted into the principal Dublin hospitals in which cases of infective disease are treated, being 1 over the admissions for the preceding week; 19 enteric fever patients were discharged, 5 died, and 132 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, December 7. Returns furnished by the authorities of six hospitals not included in the above show that there were in those institutions on Saturday last 84 cases of enteric fever, of which 7 were admitted during the week.

Six cases of measles were admitted against 5 for the preceding week, but no cases of either typhus or scarlatina were received; 11 cases of measles, 8 of typhus, and 3 of scarlatina remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 53, being 8 over the number for the preceding week, but 5 under the

average for the fiftieth week of the last ten years. The 53 deaths comprise 39 from bronchitis, and 10 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 21, the mortality in twenty-eight large English towns, including London (in which the rate was 21·8), was equal to an average annual death-rate of 23·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·1 per 1,000. In Glasgow the rate was 29·9, and in Edinburgh it was 26·1.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 29·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·1 per 1,000, the rates varying from 0·0 in eight of the districts to 9·1 in Belfast—the 136 deaths from all causes registered in that district comprising 18 from measles, 4 from whooping-cough, 2 from simple continued fever, 9 from enteric fever, and 7 from diarrhoea. Among the 17 deaths from all causes registered in Londonderry are three from whooping-cough and 1 from enteric fever. The 7 deaths in Drogheda comprise 2 from enteric fever.

In the Dublin Registration District the births registered during the week amounted to 172—96 boys and 76 girls; and the deaths to 229—111 males and 118 females.

The deaths, which are 10 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 33·8 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 32·6 per 1,000. During the fifty-one weeks of the current year ending with Saturday, December 21, the death-rate averaged 25·7 per 1,000, and was 3·1 under the mean rate in the corresponding period of the ten years 1879–88.

Twenty-one deaths from zymotic diseases were registered, being 3 over the number for the preceding week, but 6 under the average for the 51st week of the last ten years. They comprise 5 from measles, 1 from scarlet fever (scarlatina), 4 from whooping-cough, 5 from enteric fever, (being 1 under the number of deaths from that disease in the preceding week, and 6 under the number for the week ended December 7), 3 from diarrhoea, 1 from dysentery, &c.

The number of cases of enteric fever admitted during the week into the principal Dublin hospitals in which cases of infective disease are treated is 16, being 9 under the number of admissions for the preceding week. Forty-one enteric fever patients were discharged during the week, 1 died, and 106 remained under treatment on Saturday, being 26 under the number in hospital on Saturday, December 14. Returns

furnished by the authorities of six hospitals not included in the above show that there were in those institutions on Saturday 32 cases of enteric fever, of which 6 were admitted during the week, the admissions being one under the number for the preceding week.

Six cases of typhus and 5 of scarlatina were admitted. In the preceding week no cases of either of these diseases had been received. Nine cases of typhus and 7 of scarlatina remained under treatment in hospital on Saturday.

The hospital admissions include also 7 cases of measles against 6 for the preceding week. Eleven cases of this disease remained under treatment in hospital on Saturday.

Fifty-five deaths from diseases of the respiratory system were registered, being 1 over the average for the corresponding week of the last ten years, and 2 over the number for the week ended December 14. They comprise 36 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 28, the mortality in twenty-eight large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 21·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·6 per 1,000. In Glasgow the rate was 29·1, and in Edinburgh it was 24·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 25·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·3 per 1,000, the rates varying from 0·0 in eleven of the districts to 8·9 in Belfast—the 154 deaths from all causes registered in that district comprising 24 from measles (being 6 over the number of deaths from that disease in the preceding week), 2 from scarlatina, 1 from typhus, 7 from whooping-cough, 4 from enteric fever, and 1 from diarrhoea. The 15 deaths in Londonderry comprise 1 from scarlatina and 3 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 134—69 boys and 65 girls; and the deaths to 166—77 males and 89 females.

The deaths, which are 57 under the average for the corresponding week of the last ten years, represent an annual rate of mortality of 24·5 in every 1,000 of the estimated population. Omitting the death of one person admitted into a public institution from a locality outside the district, the rate was 24·4 per 1,000. During the fifty-two weeks ending with Saturday, December 28, the death-rate averaged 25·7 per 1,000, and was 3·2 under the mean rate for the ten years 1879–88.

Only 17 deaths from zymotic diseases were registered, being 4 under the number for the preceding week, and 12 under the average for the

52nd week of the ten years 1879-88. They comprise 1 from measles, 3 from whooping-cough, 6 from enteric fever, 1 from diarrhoea, 1 from erysipelas, &c.

During the week 27 cases of enteric fever were admitted into the principal Dublin hospitals in which cases of infective disease are treated, being 11 over the admissions for the preceding week, and 2 over the number for the week ended December 14. Twenty-three enteric fever patients were discharged during the week, 2 died, and 108 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week. Returns furnished by the authorities of seven hospitals not included in the above show that there were in those institutions, on December 28, 36 cases of enteric fever, of which 4 were admitted during the week, the admissions being 4 under the number for the preceding week.

Six cases of typhus were admitted to hospital, being equal to the number of admissions for the preceding week. Fifteen cases of this disease remained under treatment in hospital on Saturday last.

Only 3 cases of measles and 2 of scarlatina were admitted, against 7 cases of the former and 5 of the latter admitted during the preceding week; 9 cases of measles and 8 of scarlatina remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 43, being 12 under the number for the preceding week and 15 under the average for the 52nd week of the ten years 1879-88. The 43 deaths comprise 25 from bronchitis, and 11 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of December, 1889.*

Mean Height of Barometer,	-	-	-	30.096 inches.
Maximal Height of Barometer (on 5th, at 9 p.m.),				30.730 "
Minimal Height of Barometer (on 10th, at 3 p.m.),				29.260 "
Mean Dry-bulb Temperature,	-	-	-	43.3°.
Mean Wet-bulb Temperature,	-	-	-	41.4°.
Mean Dew-point Temperature,	-	-	-	39.1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			.242 inch.
Mean Humidity,	-	-	-	85.6 per cent.
Highest Temperature in Shade (on 17th),	-			56.6°.
Lowest Temperature in Shade (on 6th and 12th),	-			30.9°.
Lowest Temperature on Grass (Radiation) (on 12th),				22.9°.
Mean Amount of Cloud,	-	-	-	58.4 per cent.
Rainfall (on 15 days),	-	-	-	1.554 inch.
Greatest Daily Rainfall (on 19th),	-			.274 inch.
General Directions of Wind,	-	-	-	W., S.W., S.

Remarks.

A quiet, mild, but damp month, with prevalent south-westerly winds (that is, winds from points between S. and W.). These conditions were determined by the persistence of an anticyclone to the eastward and south-eastward, while numerous areas of low pressure skirted the western shores of Ireland, Scotland, and Norway in their passage northeastwards across the Atlantic Ocean and the Norwegian Sea. In central and south-eastern England sharp frost was felt towards the close of the month, while the weather remained open in Ireland and Scotland.

In Dublin the mean temperature (43.8°) was—as in November—above the average (41.1°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 43.3° . In the twenty-four years ending with 1888, December was coldest in 1878 (M. T. = 32.8°), and in 1874 (M. T. = 36.8°), and warmest in 1865 (M.T. = 46.2°). In 1886, the M. T. was as low as 37.9° ; in the year 1879 (the “cold year”) it was also 37.9° . In 1887 the M. T. was 39.9° ; in 1888 it was 43.6° , or very nearly the same as in 1889.

The mean height of the barometer was 30.096 inches, or 0.214 inch above the average value for December—namely, 29.882 inches. The mercury rose to 30.730 inches at 9 p.m. of the 5th, and fell to 29.260 inches at 3 p.m. of the 10th. The observed range of atmospherical pressure was, therefore, 1.470 inches—that is, a little less than one inch and a-half. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 43.3° , or 2.4° below the value for November, and 4.2° below that for October, 1889; that calculated by Kaemtz's formula—viz. $\text{min.} + (\text{max.} - \text{min.} \times .41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 42.9° , or 2.4° above the average mean temperature for December, calculated in the same way, in the twenty years, 1865–84, inclusive (40.5°). The arithmetical mean of the maximal and minimal readings was 43.8° , compared with a twenty-three years' average of 41.1° . On the 17th the thermometer in the screen rose to 56.6° —wind, W.S.W.; on the 6th and the 12th the temperature fell to 30.9° —wind S.S.W. on both occasions. The minimum on the grass was 22.9° on the 12th. There were 4 days of frost in the screen and 20 days of frost on the grass.

The rainfall was 1.554 inches, distributed over 15 days. The average rainfall for December in the twenty-three years, 1865–87, inclusive, was 2.419 inches, and the average number of rainy days was 17.0. The rainfall, therefore, was decidedly below the average, while the rainy days were also below it. In 1876 the rainfall in December was very large—7.566 inches on 22 days. In 1872, 4.932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4.749 inches fell on as many as 27 days. On the other hand, in 1867, only .771 of an inch was measured on 13 days; and in 1871, the December

rainfall was only $\cdot797$ of an inch on 15 days. In 1885, only $\cdot742$ of an inch of rain was measured on but 10 days, but in 1886 the rainfall was $3\cdot348$ inches, distributed over as many as 21 days. In 1887 ("the dry year"), the rainfall was $1\cdot223$ inches on 19 days; in 1888, it was $2\cdot911$ inches on 17 days.

A lunar halo appeared on the 31st. High winds were noted on 13 days, and attained the force of a gale on only two occasions, the 12th and the 19th. The atmosphere was more or less foggy in Dublin on the 5th, 6th, 14th, 15th, 21st, 29th, and 30th. Lightning was seen on the night of the 12th. A little sleet fell on the 28th.

Almost throughout the first week (1st-7th, inclusive) atmospherical pressure was abnormally high over Europe. On Thursday, the 5th, indeed, the barometer read $31\cdot00$ inches and upwards in Central Russia, and exceeded $30\cdot50$ inches all over Scandinavia, Northern Germany, and the British Islands. Considerable cold existed within the limits of this vast anticyclone. It was most intense in a band stretching from the north and centre of Russia to Sweden as well as through Germany to France. At the beginning of the week the weather was dull, mild, and windy in Ireland, which was under the influence of atmospherical depressions passing northwards across the Atlantic; while calms or light S.E. to E. winds and sharp frosts prevailed in England. On Tuesday temperature gave way in Ireland also, and frosts occurred on Thursday and Friday. In Dublin the mean height of the barometer was $30\cdot395$ inches—pressure ranging between $30\cdot216$ inches at 9 a.m. of Sunday (wind, S.) and $30\cdot730$ inches at 9 p.m. of Thursday (wind, also S.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was $40\cdot9^{\circ}$. The mean of the daily highest and lowest shade temperatures was $41\cdot7^{\circ}$. The thermometer rose to $49\cdot6^{\circ}$ on Sunday and fell to $30\cdot9^{\circ}$ on Friday. Rain fell on Friday to the amount of $\cdot240$ inch; and on the morning of Sunday, the 8th, to the amount of $\cdot030$ inch—total measurement, $\cdot270$ inch, on two days.

Particularly changeable weather prevailed in all districts during the second week (8th-14th, inclusive) pressure, temperature, and wind being variable beyond measure. Several extensive and even deep depressions travelled north-eastwards across the Atlantic, British Isles, and Scandinavia—as these systems approached, the wind became southerly, temperature rose, clouds increased, and rain fell; as they passed away the wind veered to W. and N.W. and fell light, with clearing skies and frost. In Dublin the mean height of the barometer was $29\cdot807$ inches—pressure ranged from $30\cdot226$ inches at 9 a.m. of Sunday (wind, S.W.) to $29\cdot260$ inches at 3 p.m. of Tuesday (wind, W.N.W.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was $41\cdot2^{\circ}$. The mean of the daily maxima and minima was $41\cdot8^{\circ}$. On Monday the thermometers in the screen rose to $53\cdot9^{\circ}$, on Thursday they fell to $30\cdot9^{\circ}$. The lowest temperature on the

grass was 22·9° on Thursday. The rainfall amounted to ·333 inch, on four days. Of this amount, ·180 inch was registered on Sunday and ·100 inch on Thursday. There was a dense smoke fog on the forenoon of Saturday and lightning occurred on Thursday evening.

A south-westerly air-current and open unsettled weather prevailed throughout the third week ending Saturday, the 21st. Atmospheric pressure was persistently high over France and Germany, low to the north-westward of the British Isles and over Norway. In the area covered by the high pressure, calms or variable winds and hard frost prevailed. In the British Isles and Scandinavia, on the contrary, squally winds between S.W. and N.W. and frequent showers, with but little frost, were prevalent. In Dublin the mean height of the barometer was 30·025 inches—pressure ranging from 30·403 inches, at 9 a.m. of Sunday (wind, W., light) to 29·451 inches at 9 p.m. of Saturday (wind, S.E.). The mean dry bulb temperature at 9 a.m. and 9 p.m. was 44·8°. The mean of the daily max. and min. readings of the screen thermometers was 44·7°. The absolute maximum was 56·6° on Tuesday; the absolute minimum was 34·6° on Sunday. Rain fell on five days to the amount of ·654 inch—the heaviest falls in 24 hours being ·274 inch on Thursday and ·251 inch on Saturday. There was a very dense fog over the city on Sunday.

During the week ended Saturday, the 28th, the distribution of atmospheric pressure was of a mixed type—at first chiefly cyclonic, especially in the far N. and N.W.; afterwards, anticyclonic. The weather was generally open, and on Christmas Day frost was absent from the British Isles, France, Western Germany, and the greater part of Scandinavia. This was the more remarkable as on the 23rd and 24th very low temperatures were reported from the Gulf of Bothnia, the 8 a.m. readings on those days at Haparanda being +7° and -4° F. respectively. Up to and including Tuesday, the 24th, rain fell very generally—the weather afterwards became unusually dry, mild and quiet. In Dublin the mean height of the barometer was 30·109 inches, pressure ranging from 29·460 inches at 9 a.m. of Sunday (wind, S.W.) to 30·473 inches at 9 p.m. of Thursday (wind, S.S.W.). At 8 a.m. next morning (Friday) readings as high as 30·94 inches at Wisby, in Gothland, and 30·90 inches at Stockholm, were recorded. In Dublin the mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·4°. The mean of the daily highest and lowest temperatures was 46·2°. The screened thermometers rose to 55·6° in the night of the 23rd-24th, and fell to 37·6° on Saturday. The rainfall amounted to ·287 inch, and was distributed over three days—·173 inch fell on Monday, and ·099 inch on Saturday.

The last three days of the month were mild and chiefly fine in Dublin, while severe frost prevailed in the S.E. and centre of England.

The rainfall in Dublin during the year ending December 31st has

amounted to 27·272 inches on 193 days, compared with 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a twenty-three years' average of 27·673 inches on 194·4 days.

At Greystones, Co. Wicklow, the rainfall in December, 1889, was 2·125 inches distributed over 11 days. Of this quantity ·580 of an inch fell on the 28th, ·350 of an inch on the 13th, and ·320 of an inch on the 19th. Since January 1, 31·260 inches of rain have fallen at Greystones, on, however, only 132 days. In 1888 the corresponding figures were 34·540 inches of rain on 138 days.

RAINFALL IN 1889,

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground, 3 ft. 2 in. ; above sea level, 57 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	2·213	1·221	11th	16
February, - - -	2·449	·742	10th	20
March, - - -	1·076	·881	19th	17
April, - - -	2·607	·420	11th	21
May, - - -	2·131	·609	5th	17
June, - - -	·100	·032	8th	6
July, - - -	2·570	·624	22nd	15
August, - - -	5·747	1·942	19th	22
September, - - -	1·043	·350	23rd	13
October, - - -	4·853	·944	19th	22
November, - - -	·929	·859	22nd	9
December, - - -	1·554	·274	19th	15
Total, - - -	27·272	—	—	193

The rainfall was four-tenths of an inch in defect of the average annual measurement of the twenty-three years, 1865–87, inclusive—viz., 27·673 inches.

It will be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, and in 1884, when the measurement was 20·467 inches. In seven of the twenty-three years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872,

when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1889, there were 193 rainy days, or days upon which not less than $\frac{1}{10}$ inch of rain (one hundredth of an inch) was measured. This was slightly in defect of the average number of rainy days, which was 194·4 in the twenty-three years, 1865–87, inclusive. In 1868—the warm dry year of recent times—as well as in 1887, the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8 inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded. Included in the 193 rainy days in 1889 are 15 on which snow or sleet fell, and 23 on which there was hail. In February hail was observed on 7 days, in March on 5 days, and in April on 4 days. Hail also fell twice in January and October, and once in May, July, and November. Snow or sleet fell on 1 day in January, on 8 days in February, on 2 days in March, on 1 day in April, on 2 days in November, and on 1 day in December. Thunder and lightning occurred on five occasions during the year—once in April, July, and October, and twice in August. Lightning was also seen on two occasions in October and on one occasion in each of the last two months of the year.

The rainfall was distributed as follows:—5·738 inches fell on 53 days in the first quarter, 4·838 inches on 44 days in the second, 9·360 inches on 50 days in the third, and 7·336 inches on 46 days in the fourth and last quarter.

Of the 9·360 inches which fell on the third quarter of the year, 5·747 inches were measured in August.

J. W. MOORE, B.A., M.D., Univ. Dubl.; F. R. Met. Soc.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1889.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevailing Winds
January	° 56·2	18th	° 27·1	3rd	° 46·8	° 38·0	Insa. 2·218	16	Insa. 30·150	Insa. 30·711	3rd	Insa. 29·200	9th	W., S., N.W.
February	° 55·0	1st	° 21·7	11th	° 45·5	° 35·1	2·449	20	29·991	30·474	4th	29·189	10th	N.W., W.
March	° 58·3	28th	° 31·0	3rd	° 49·3	° 38·6	1·076	17	29·999	30·546	15th	28·944	19th	N.W., W.
April	° 59·7	20th	° 33·1	15th	° 51·3	° 40·9	2·607	21	29·748	30·153	18th	29·179	4th	N., N.E., N.W.
May	° 72·5	21st	° 40·8	11th	° 60·7	° 48·4	2·131	17	29·790	30·113	20th	29·440	28th	S., S.E., E.
June	° 74·8	22nd	° 41·2	11th	° 67·0	° 52·0	0·100	6	30·077	30·482	5th	29·661	2nd	E., N.E.
July	° 77·8	6th	° 44·0	8th	° 65·7	° 51·7	2·570	15	29·944	30·520	1st	29·498	21st	N.W., W.
August	° 71·8	1st	° 46·4	25th	° 64·5	° 52·7	5·747	22	29·852	30·262	31st	29·145	21st	N.W., W., W.S.W.
September	° 69·7	11th	° 38·9	25th	° 60·9	° 50·6	1·043	13	30·064	30·455	15th	29·504	23rd	N.W., N., W.
October	° 57·4	7th	° 35·2	14th	° 52·9	° 43·3	4·853	22	29·673	30·293	25th	28·790	7th	W., E.N.E.
November	° 59·7	7th	° 29·6	28th	° 51·1	° 41·7	0·929	9	30·191	30·619	16th	29·290	24th	W., S.W.
December	° 56·6	17th	° 30·9	6th-12th	° 48·7	° 38·8	1·554	15	30·096	30·730	5th	29·280	10th	W., S.W., S.
Extremes, Totals, and Means	° 77·8	July 6th	° 21·7	Feb. 11th	° 55·4	° 44·3	Insa. 27·272	Days 198	Insa. 29·865	Insa. 30·730	Dec. 5th.	Insa. 28·790	Oct. 7th	W., N.W.
49·8°														

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dublin; F.K.Q.C.P.

F. R. Met. Soc.

PERISCOPE.

THE HYDERABAD CHLOROFORM COMMISSION.

THE second Hyderabad Chloroform Commission has ended its labours, and our contemporary, the *Lancet*, in its issue of the 18th of January, gives a summary of the work done, and of the conclusions arrived at. As in the case of the former Commission, Surgeon-Major Lawrie presided; but the important fact in the present Commission was the presence of a representative of the *Lancet*, Dr. T. Lauder Brunton. The experiments were conducted with the utmost care, and every precaution that scientific knowledge and familiarity with the details of vivisection could devise were adopted to insure freedom from error either in the performance of the experiment or the conclusions drawn from it. The liberality of his Highness the Nizam of Hyderabad had secured all the necessary scientific apparatus and accommodation, so that the labours of the investigators of the merits or demerits of chloroform were facilitated in every way.

The history of the great work just completed is of more than passing interest. All practical surgeons know that for some ten or twenty years past the London schoolmen and their brethren in the New England States of North America have been not only warmly advocating the use of ether as the best general anæsthetic, but they have denounced with energy the use of chloroform. Amongst the most influential and able of the partizans of ether was the *Lancet*, which was unsparing in its denunciation of chloroform, and its influence with the profession was so great that surgeons using chloroform as their routine anæsthetic did so at considerable personal risk. Chloroform was on the defensive, and everything seemingly offered an easy victory for the advocates of ether when, in 1887, Dr. Reeve, of Dayton, U.S.A., in a contribution to the *Medical News*, asserted that the inhalation of ether "in the human subject may cause death as suddenly, as unexpectedly, and in the identical manner that chloroform does." To openly publish such an heretical opinion in the New England States required more than the average amount of moral courage, and, as might be expected, the opinion was promptly denounced. Dr. Packard, of Philadelphia, said that sudden deaths under ether almost invariably occurred in patients who were previously enfeebled by age, loss of blood, by exhausting disease, or by the results of injury which had already weakened their hold upon life; while in a large proportion of the cases of sudden death under chloroform it occurred in healthy subjects, without loss of blood or dangerous lesion. The war of words recommenced, and the "etherists" were further aggravated by a very valuable paper by Dr. Stroud, which

appeared in *Daniel's Texas Medical Journal*, drawing attention to the beneficial effects of chloroform inhalation in cerebro-spinal meningitis.

A special meeting was held in the New York Academy of Medicine to consider the relative merits of the different anæsthetics, and Dr. Gerster tried to reconcile the etherists and chloroformists by pointing out that, in their proper spheres, they were both useful; but the opponents were not to be reconciled, and the etherists, on the declaration of Dr. Knapp, of New York, of his conversion to the use of ether, were generally considered to have secured a victory. Southern American surgeons now felt called upon to state the grounds for their preference for chloroform, and, in October, 1887, Dr. Hunter M'Guire, of Richmond, Virginia, read a paper, "The Choice of General Anæsthetics," before the Medical Society of Virginia, in which he gave an account of his great experience with chloroform whilst Medical Director of the famous "Stonewall" Jackson Corps Army of Northern Virginia, C.S.A. His enormous total of 28,000 consecutively successful chloroformisations could not be either ascribed to chance or ignored, neither could it be asserted that a drug was inherently dangerous which could be freely administered without a death to 28,000 consecutive patients, very many of whom, as was the case of their great leader, had, prior to inhalation, suffered enormous loss of blood, and the great majority of whom had suffered privations and hardships, and undergone fatigues that have made their corps immortal. In the same year Dr. Julian J. Chisolm read before the Baltimore Academy of Medicine his papers "Chloroform: the Best of Anæsthetics;" and "A very valuable Lesson for those who use Anæsthetics"—papers telling of his 10,000 successful administrations of chloroform as both a military and a civil surgeon.

At home the question was very pronouncedly brought before the profession and the public by a philippic in the *Lancet* of the 15th of September, 1888, against the use of chloroform, in which, commenting on the death of six patients whilst under chloroform anæsthesia, our contemporary hysterically demanded—"Was there any reason why ether could not have been administered instead of chloroform?" In the following issue the journal contained a letter from Mr. Foy, whose series of articles on "Anæsthetics" were then commenced in our pages, in which he protested against the tone of the *Lancet's* leader, and argued that it was not the part of a scientific paper to raise a popular outcry against a valuable medicinal agent—one which he considered to be the best anæsthetic we possess. He stated that the greater number of deaths under chloroform narcosis were due to faulty administration, and therefore avoidable. The letter called forth a reply, and produced a considerable amount of correspondence. The very positive assertions of the *Lancet* on the danger of chloroform finally brought a letter from Surgeon-Major Lawrie, stating that he had had 50,000 chloroformisations done under

his charge without the loss of a single life, and the very important announcement that his Highness the Nizam of Hyderabad had authorised him to place £1,000 at the disposal of the *Lancet* for the purpose of defraying the expenses of a representative from that Journal to examine, with the scientific experts of Hyderabad, the properties of chloroform as an anæsthetic. Dr. Lauder Brunton was selected, and the Commission is over. The experiments were such as should satisfy the most exacting. To quote the *Lancet*—"The experiments were of two kinds; those of one group being made without recording apparatus, and being intended to ascertain what influence is exerted by various conditions upon the relation between the stoppage of heart and of respiration, and the limits within which artificial respiration and other means of resuscitation are useful. The second group consisted of experiments with recording apparatus, and were made for the purpose of ascertaining the effect of various conditions upon the heart and blood pressure." Chloroform was given in all sorts of ways, with the invariable result that the respiration stopped before the heart. The Commission drew up fourteen practical conclusions, which may be summarised as follows:—The recumbent position on the back and absolute freedom of respiration are essential. Tight clothing of every kind should be avoided. An apparatus is not essential. A convenient form of inhaler is an open cone, or cup, with a little absorbent cotton inside at the apex. At the commencement of inhalation care should be taken, by not holding the cup too close over the mouth and nose, to avoid exciting, struggling, or holding the breath. As a rule, no operation should be commenced until the patient is fully under the influence of the anæsthetic. The administrator should be guided as to the effect entirely by the respiration. If breathing becomes embarrassed, the lower jaw should be pulled or pushed from behind the angles forward. Alcohol may be given with advantage before operations under chloroform, provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation. Suspended respiration is to be treated by artificial respiration and lowering the head. They add that:—"The Commission has no doubt whatever that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

It is very gratifying to us to see such a clear and unequivocal confirmation of the views on the safety and value of chloroform so recently put forward in this Journal by Mr. Foy; and we would particularly draw our readers' attention to the practical identity of the rules drawn up for the administration of chloroform by Mr. Foy and by the Commission. There is occasion neither for addition to the rules as they appear in "Anæsthetics, Ancient and Modern," nor for alteration in them. When Mr. Foy's views on chloroform were published, ether was the favourite

anæsthetic; and in advocating an unpopular doctrine, and in formulating rules for the administration of an unpopular drug, the author of "Anæsthetics" had much professional prejudice to contend against. Now that the most carefully conducted series of experiments that have, perhaps, been ever made in practical therapeutics so fully confirm the correctness of his opinion, we have little doubt that his book will become the most popular of monographs on anæsthetics with both students and practitioners.

UNQUALIFIED PRACTICE IN SOUTH AUSTRALIA.

WE learn from the *Australasian Medical Gazette* (Sydney) that the Supreme Court of South Australia granted a *mandamus* directing the S. A. Medical Board to give a certificate of legal qualification to practise to one "George Bollen, of Port Adelaide, Doctor of Medicine." The Medical Board met, registered Mr. Bollen's qualification, and forthwith resigned, "lest they might be forced against their consciences to admit a crowd of holders of similar non-qualifying qualifications to the roll of Practitioners of South Australia." It appears that Mr. Bollen retired from Australia for 13 or 14 months, and re-appeared with a diploma of Doctor of Medicine of the Hahnemann College of Chicago. It was sworn that this document entitled the holder to practise in Illinois and in other States of the American Union, and it was decided that this fulfilled the requirements of the Medical Act of 1880, which, it was stated, received the approval of "Dr." Bollen before it was passed, but which was not referred "to the medical profession, to the Medical Board, to the Colonial surgeons, nor to any body or person qualified to express an opinion as to its effect."

LEPROSY IN AUSTRALIA.

FROM a paper read by Dr. Andrew Shields before the Victorian Branch of the British Medical Association we learn that in Australia leprosy is, with few exceptions, confined to the Chinese. In one instance only (in New South Wales) is a "European" known to be affected. In Victoria, where the disease appears to be decreasing since a Report was made to the London College of Physicians in 1867, there are five lepers in the leper camp at Fort Nepean. In South Australia no cases are known to exist, though there may be some amongst the Chinese population. In New South Wales the number of lepers has more than doubled in the last ten years. Twelve cases are known to the Board of Health, of whom one is a Colonial of European parentage, and has contracted the disease in the colony; one is a Javan; the others are Chinese. The state of Western Australia with regard to leprosy is unknown. In Victoria and South Australia the Public Health Acts give power to isolate lepers.

THE DUBLIN JOURNAL

OF

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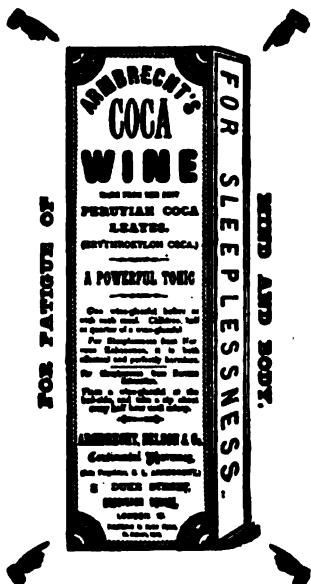
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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 1, 1890.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*On the Medical Selection of Lives for Assurance.** By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; President of the Section of State Medicine, in the Royal Academy of Medicine in Ireland; Senior Physician to the Meath Hospital; Fellow of the King and Queen's College of Physicians; Diplomat in State Medicine, Trin. Coll., Dubl., &c.

LIFE and fire are the objects in view of which assurances are now mostly effected. No longer are they, as formerly, negotiated against thieves, highwaymen, death from drinking Geneva, loss of female virtue, divorces, or making boards out of sawdust.

The early offices, it is true, charged enormous premiums owing to their not possessing reliable data for calculation; and perhaps they were not unreasonable in doing so, for some of their undertakings, if we may judge from the enumeration just given, were extremely hazardous, and involved risks not always avoidable.

The contract of life assurance is one based on a full knowledge by the insuring company of the *health* and *habits* of the person insured. Upon the selection of lives depends to a large extent the financial success of a Life Assurance Company. The duties of the medical examiner—on whom very largely depends this selection—are responsible, and in some respects peculiarly so. There may be no difficulty in at once coming to the conclusion that certain lives are

* Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, on Friday, February 7, 1890. [For the discussion on this paper see page 269.]

eligible, and that others are quite ineligible; but there is a large number of intermediate lives that will try the skill and tax the patience of the examiner, demand mature consideration, and involve further inquiries, before they can be finally disposed of.

It is now universally admitted by all parties interested that the medical element constitutes an important item in the consideration of a proposal for life insurance. The medical examiner's relation to the proposer is different from that which he occupies in his ordinary professional capacity. In the latter case the patient exposes his infirmities, and even intensifies them; the applicant for life assurance, on the other hand, may desire to lessen their importance, or conceal their existence. In fact the applicant for assurance stands in a relation the very reverse of that occupied by a patient. The latter comes for relief, and is ready to aid, as far as he can, in the discovery of his ailment. The former approaches with the assumption of health, and the examiner must detect unaided any fallacies in that assumption; and it may so happen that the would-be assurer is a rogue, and his object and interest are to deceive.

The questions set forth for answer in the Proposal Form are sometimes regarded by medical examiners, not permanent officials of a company, as superfluous and vexatious. They are irritated by what seems the dictation to them of a special method of examination, and resent the inquiries made by an office as an imputation upon their mode of reporting. They do not remember that the answers to these inquiries are preserved for reference, and that legal decisions have turned on their having or not having been asked and answered. These questions are also useful in suggesting subjects that a careless or over-busy practitioner might slur over or forget, and no matter how acute and vigilant a medical adviser may be, many points may elude his inquiry or observation, owing to the necessary limits of time and space, as well as to the reticence, wilful or accidental, which many exercise on matters of health. It may be laid down as a general rule that the best men give the most satisfactory and detailed reports, as they fully appreciate the aid they afford towards the development of a social scheme of the highest value and importance.* It has long been settled law in these countries that any untrue answer to the questions devised by an assurance company to elicit the knowledge requisite for their contract vitiates the policy, and

* Sieveking. *The Medical Adviser in Life Assurance*. 1874. P. 48.

discharges the company from their liability under it. So far from regarding the present list of questions as vexatiously minute, I anticipate that before long assurance companies will not be satisfied without information as to the condition of the retina; the state of arterial tension; the integrity of the various reflexes (superficial, deep, cranial, organic); the nutrition of nerve-fibres and muscles, as estimated by electricity; the centesimal excretion of urea; microscopical examination of urinary sediments; and a statement of the amount of respiratory capacity.

The regular employment of medical men to examine candidates for life assurance is a practice of comparatively recent date. The custom of the old offices, prior to about 1820, was for each life proposing to sign a very distinct and binding declaration to the effect that the individual had not had "cow or small-pox, or any other disease tending to shorten life." No mention seems to have been made of family history. The proposer had to give a reference to "two persons of good repute, one, if possible, of the medical profession." Persons who did not appear before the directors, or who could not refer to a medical gentleman, were required to give a reference to three persons.^a The disastrous consequences of dispensing with a medical examination was shown by the late Dr. Brinton, who examined a number of insurances effected without medical examination. From three or four pages of these cases he collected no less than forty instances of death from pulmonary consumption, at periods which averaged eighteen weeks from the date of effecting the policy, but often did not exceed three, four, or five weeks. The average loss to the company on these forty policies was exactly forty times the premiums paid.^b It is in the mortality from tubercular diseases—the very class which, under the old system, was the bane of assurance companies—that selection shows the most powerful influence in favour of the companies. Mr. Dovey^c of the Standard Life Assurance Company, London, in a paper read before the Institute of Actuaries, shows that under the modern system, in the first year of assurance, the actual deaths from these diseases are less than the tenth of the computed number; in the second year the proportion increases to 27 per cent.; in the third, to 52 per cent. of the computed mortality. After the third year, the proportion, although showing fluctuations, appears to

^a Sieveking. *Loc. cit.* P. 43.

^b Brinton. *Med. Select. of Lives for Assurance.* 1856. 2nd ed.

^c *Assurance Magazine.* Vol. XXIII., p. 285. 1881.

settle down to an average of 60 per cent.—this ratio not showing any tendency to increase in the later years of assurance. Thus, after the “immediate effects of the medical examination have passed away, there remains a more permanent, though less strongly marked, influence in the selection of the mortality for a long series of years.” This beneficial result may be due to different causes; to the class selection of assured lives; to their increasing age; to the number of predisposing causes which can be appreciated; and to the increased accuracy of skilled personal examination.

In reference to the list of questions asked on the Proposal Forms, there are some points which may be adverted to with advantage to the more inexperienced examiners. The conservatism with which insurance offices cling to the recognition of an apoplectic habit is singular, as it is well known there is no type of face or form characteristic of the conditions which lead to this catastrophe. The apoplectic habit, in as far as it is characterised by the conjunction of broad chest and shoulders and short neck, with a large abdomen, powerful muscular system, and a reddish face, is found absent in the majority of those who suffer from cerebral hæmorrhage, and who are more often poorly nourished, lean, scraggy, long-necked persons. Nothnagel is inclined to think that the popular fear of apoplexy in one who may be short, stout, thick, and red, is based upon a confusion of this affection with cerebral hyperæmia and its attendant symptoms. However, it is a very old belief that there is a particular conformation of body in those who are prone to attacks of apoplexy, the pattern being denoted by a large head and red face, short thick neck, and a stout, square, squat build of body. This opinion dates from the time of Hippocrates; its correctness has become doubtful to modern pathologists. Dr. Wilks repudiates it entirely. It is probable that apoplexy—that is, cerebral hæmorrhage in consequence of disease of intra-cranial arteries—may befall any who are endowed with the antecedent arterial conditions, irrespective of their particular build of body. A more important fact to bear in mind is the undoubtedly hereditary character of apoplexy; “it runs in families”—i.e., in an indirect way, in virtue of the inheritance of a tendency to arterial degeneration. The influence of heredity may induce a seizure at an earlier age than 40, before which age apoplexy otherwise rarely occurs. In 116 claims for apoplexy against the Scottish Widows’ Fund, the youngest victim had reached the age of only 22. His father had died of the same disease at 66.

There is seldom any attention directed in the Proposal Forms to the existence of a discharge from the external ear, yet such a condition betokens incalculable dangers to the life of the individual who has such a symptom. The importance of attention to aural discharges, in regard of prognosis, was long ago insisted on in this city by Sir William Wilde, and it is not put too forcibly by Dr. Patterson Cassells,^a when he says that, for general guidance, it may be accepted as an axiom that, with an ear discharge—whether moderate or copious in quantity, continuous or interrupted in its flow, short or long in its duration—*so long as it exists*, one cannot tell how, when, or where the case may terminate. He suggests that the question should be put to proposers, “Have you at any time suffered from an ear discharge?”

Inquiries are seldom made as to whether the proposer is liable to attacks of erysipelas. Erysipelas is a disease of diminished vitality, and its occurrence—especially if more than once—should be regarded with suspicion, particularly in those whose occupation exposes them to intemperate habits, or to sharp, cold winds. I was acquainted with an old clergyman who lived at Kingstown; he had seven annual attacks in succession of facial erysipelas, contracted periodically during the spring easterly winds. He died in the eighth attack with head symptoms. In the case of the Scottish Widows' Fund, Dr. Begbie found erysipelas had proved fatal in eight cases, and that it was associated, as a cause of death, particularly with disease of the brain and its membranes, and disorders of the liver and bowels. Considering the frequency of this association, the disposition of the disease to recur, and its connection with depraved digestion and defective assimilation, Dr. Begbie was of opinion that those who have been affected with it cannot be considered as eligible subjects of life assurance.^b

Another matter which should not be overlooked is the occurrence of fecal obstruction, especially if originating near the right iliac fossa. The applicant may deem it unworthy of mention, regarding it as constipation; but many people are liable to a recurrence of obstruction, probably from some malformation or band of adhesion, and succumb eventually in the absence of the timely assistance which had rescued them on previous occasions.

The exact state of health at the time of insurance does not represent the whole of the risk incurred by an office. The restora-

^a B. M. Jour. Vol. I., p. 323. 1877.

^b Assur. Mag. Vol. VIII., p. 336.

tion of health after an attack of pneumonia may be only temporary ; it may be speedily followed by phthisis. A convalescent from rheumatic fever may hasten to get his life insured before the signs of valvular disease originating therefrom have become objective. A subject of winter cough may get himself accepted in midsummer, during his æstival intermission, and die of bronchitis early in the ensuing winter. A patient with angina pectoris might easily pass in an interval between the paroxysms. Some practitioners entertain the opinion that, provided they can certify that the applicant is in good health at or about the time of the insurance, this is all the insurers need know. The same opinion is commonly held by the candidate, and a proposer, after having been attended by one medical man for an illness, will apply to another, a comparative stranger, to certify as to his condition of health for insurance. On this account the directors of a company require the applicant to furnish them with the names, if any, of his different medical attendants. Policies have been vitiated by the insured saying they had not had any medical attendant when they had, and verdicts given for the offices on the ground of fraud.^a In the case of Maynard against the Pelican Life Office, Lord Tenterden remarked that to refer to one medical man whom the insured knew would speak well of his health, and not to others whom he knew could not report favourably (although the insured did not die of the disease for which they had attended him), would vitiate his policy. Similarly, for the insured to refer to a practitioner who had attended him three years previously, and to omit to mention one who had attended him more recently, or to refer the office to a practitioner who had attended him for many years for mere trivial complaints, and to omit one who had attended him, even though for a short period only, for a serious disease, would equally render the policy void.^b

It may here be worth remarking that, when a medical man is appealed to by an assurance office respecting the health of one of his patients desiring to insure—leaving the company out of the question—justice to the proposer, to his survivors, and to the medical man himself, demands that he should report without a shadow of concealment. Unless he is prepared to do this, he had far better decline to report altogether. Further, he is not justified in reporting as the private medical adviser of the person whose

^a Tidy. *Legal Med.* Part I. P. 397.

^b Tidy. *Op. cit.* P. 373.

life is in question, unless he has the authority of his patient to do so.

The conscientious discharge, in this respect, of his duty by an examiner may lead to the interruption of life-long friendships. William Cullen and Sir Robert Christison, two of the brightest lights of the Edinburgh school, and indeed of the medical world of that time, were on such terms of intimate friendship as to be called *les deux inséparables*. Cullen had a bad attack of apoplexy in Paris, so bad that Dr. Alison, who happened to be passing through Paris at the time, thought he could not recover. He, however, apparently made a good recovery, but about two years after his attack of apoplexy, one day when on duty in the hospital, he fell in a fit of epilepsy, in presence of a crowd of students. Every well-informed physician knows that epilepsy after apoplexy usually makes short work with its victim—in two years commonly, or in three years. Cullen determined to marry, although he had had several subsequent fits at moderate intervals. Sir Robert Christison, in his Autobiography,^a describes what happened:—"On the occasion of his marriage our friendship underwent a severe trial, and did not withstand it. He (Cullen) had to insure his life for the benefit of his wife and family—and heavily for a young man at the outset of life. He referred to me, as his medical adviser and friend, for a certificate of eligibility. I certified that I knew nothing to detract from the value of his life, except his notorious attack of apoplexy and his fits, 'of the nature of which I had not any personal knowledge, never having seen him in one.' He expressed great surprise and disappointment, pressed me very hard to alter the terms of my certificate, said gloomily that I had a much worse opinion of his case than he had ever dreamt of, and at length worked himself up to urge upon me that my opinion would put an end to his marriage. But as I was satisfied that a few years would end his life, I stood firm under this cruel trial; and we parted, coldly on his part—and cold he remained ever afterwards. I had the satisfaction, however, of learning immediately that I was not only right, but likewise his best friend, for his principal trustee, who was also his agent, called on me on the subject, got my unreserved opinion, and, unlike Cullen himself, expressed great obligation to me for my firmness and frankness, because he had in vain tried to get at the bottom of *the fits* by referring even to those medical men who had witnessed them.

^a 2 Vols. 1885. Vol. I., p. 128.

'But now,' added he, 'the insurance directors are warned, I shall tell them they must take every means for satisfying themselves as to the nature of these fits; but that there must be no calling of the insurance in question hereafter on the ground of *information being withheld*.' The result was that the physician of the insurance company—a pompous, conceited, superficial man—himself certified the fits as being of little or no moment, and the proposal was accepted for a merely nominal and trifling extra premium. Cullen had the folly to twit me with his success; and the marriage—which never had been endangered, as his agent assured me, by this difficulty—was carried through. But in about two years more the company had to pay £5,000 to the marriage trustees. Cullen died in a paroxysm; and Edinburgh medicine lost one of her most gifted and promising sons."

Consumption is, perhaps, of all the diseases from which selected lives are known to suffer, the one to which most attention has been directed in medical statistics of life assurance, and a result of the increased vigilance of directors and their officers in avoiding consumptive risks is a very much lessened mortality from this cause. Consumption as a cause of death in the family record should never be overlooked by the examiner. If it happens that brothers and sisters of the applicant have died in youth from lesions of the brain or abdominal organs, tuberculosis may be suspected as the cause of death, because among children tubercle generally attacks the brain and the cavity of the abdomen before it appears in the lungs. When the infant mortality in the family history has been great (generally entered in the proposal as died "young," "in infancy," "in childhood," without any further particulars), and the surviving members, including the applicant, are quite young, or he is the only survivor, the risk is very hazardous. It is a sound principle of action in life assurance to recommend the rejection of a life when so many as two immediate relatives are admitted to have died of consumption. The mortality from phthisis is far more due to its undoubted and constant hereditary transmission than to any peculiarities of climate. Parties proposing for assurance, aware how much an unfavourable family history tells against a life, try at times to cover the existence of phthisis by describing it under some other name. Thus a relative is said to have died of "asthma" or "bronchitis," when, on inquiry, the disease is found to have been undoubtedly consumption; and the very convenient expression, "died at" or "soon after childbirth" is constantly used, where the death has

been from some constitutional malady—"dying in childbirth" proving on inquiry to mean after some weeks, and "soon after" to mean several months subsequent to that event. A knowledge of how rapid is the progress consumptive disease often makes after delivery gives an air of reasonableness to the death being attributed to the processes of childbirth. The Registrar-General's office presents a means of verifying the cause of death which has not hitherto been systematically turned to account in inquiries connected with life assurance. As with consumption, so, when there is a strain of insanity in the stock, the examiner must be on the watch for outcroppings of the flaw or fault, speciously veiled in the family history under such doubtful terms as "nervous depression," "nervous debility," "hypochondriasis," "cerebral congestion," or even a liability to "frequent headaches." When a proposer, descended from an insane parent or parents, or with one or two of his immediate relatives so affected, has a family history spotted with such neurotic blots, it will be advisable to decline the life.^a

The medical examiner should be on the *qui vive* in respect of any suggestion as to the necessity of examining the rectum. Many cases have occurred in which insurance companies have lost money, after a short period of insurance, by the neglect of this method of examination.^b Dr. Edward Hamilton, in his "Clinical Lectures on Diseases of the Lower Bowel," mentions a case recorded by Dr. Allingham of a gentleman who was about to be insured at ordinary rates, owing to his healthy aspect and the normal state of all his organs, when the history of some bowel trouble led to an examination of the rectum, in which cancer was found to exist beyond question.^c Cancer of the rectum does not show the same tendency to hereditary transmission insisted on for cancer in other situations, and the symptoms may also be so completely suppressed that it may for a long time elude the notice of the patient himself, his friends, and his medical attendant. Bearing on the latency of cancer of the rectum, there is an instructive case recorded by Hilton Fagge.^d An old woman died in Guy's Hospital, and he discovered three tumours in the brain, or in its membranes, from whose appearance (columnar epitheliomata) he felt convinced that

^a Assurance Magazine. Vol. VIII., p. 334.

^b See Med. Press and Circ., 12th June, 1889. P. 629.

^c Dubl. Jour. Med. Science. Vol. LXXVI., p. 69.

^d Pract. Med. Vol. I., p. 103.

they must be secondary to a primary growth elsewhere. But he searched every part of the body in vain, until at length he happened to notice that the extreme lower end of the rectum had not been taken out with the rest of the intestine. This, when removed, was found to contain a large ulcer, with prominent fungating edges, which was evidently the lesion he had been looking for, although it had given rise to no symptoms during life. Even the administration of enemata had failed to lead to its discovery. One may well exclaim with Ovid, "*Felix! quem faciunt aliena pericula cautum!*"

The previous acceptance of a candidate in another or in the same company must not tempt the examiner to relax his vigilance. In the lapse of time since a previous examination the personal habits of the applicant, the development of some hereditary tendency or constitutional disease, or the occurrence of some severe illness or accident may have changed the conditions of the risk, and have affected the eligibility for assurance. As in a *bonâ fide* consultation on a private patient the fresh adviser generally examines for himself, and forms his own opinion on the case, so ought the examiner of a company treat a candidate who may have been accepted by another company.

In regard to "habits," a young examiner is apt to be satisfied with the stereotyped answer, "strictly temperate." But there is no phrase as to the meaning of which opinions differ more than that of "strict temperance." The proposer's idea of what is strict temperance may differ from that adopted by the company, and an answer, truthful from his point of view, may appear the opposite from theirs. The fault generally lies in the wording of the question. The law requires material facts to be disclosed, and questions asked to be truly answered; but if the questions seek information not about facts, but about matters of opinion, it seems fair to throw on those who seek to show the answers were untrue the onus of proving the answer did not agree with the opinion of those who made it. The medical examiner should, by a series of questions, put with professional tact and with seeming indifference of manner, elicit information as to the quantity and nature of the spirituous liquor imbibed, whether he is in the habit of drinking before meals, or upon an empty stomach, and whether or not his occupation peculiarly exposes him to temptation. A good mode of inquiry is—"What is your usual beverage—beer, wine, or spirits—and their general amounts? Do you take any spirits in the forenoon?"

Is that a habit?" To prevent trouble, it is worth while to inquire specifically what the proposer drinks, how much, and when. It is difficult to define in words what constitutes "intemperance," and this difficulty opens a door to much discussion and difference of opinion. Thus, in the case of *Southcomb v. Merriman*, the medical man admitted that the insured had had several outbreaks of intemperance, which he did not state, because he thought they had no influence on the health of the applicant. There was a verdict for the plaintiffs (executors of the insured), but a rule for a new trial was obtained; yet twelve witnesses proved the applicant to have been very temperate, and twenty-one that he was the reverse.^a For insurance purposes the true question is, not what constitutes intemperance generally, but, is there reason to believe that the applicant takes more alcohol than his constitution will bear? In insurance cases the physician must consider the word "intemperance" as a habit prejudicial to the life of the special individual, and not in any broad and general sense. If one man drinks a glass of wine daily, and it makes him intoxicated, he is intemperate if he continues to drink that one glass of wine. But if another man drinks six glasses daily, and they have no bad effect on him, but rather the reverse, he is not an intemperate man even if he continue to drink six glasses daily.

The effects of intemperance exhibit themselves chiefly at a comparatively early age, the maximal rate of mortality in such lives occurring between 41 and 50, so that a person who at that age gives evidence of habitual temperance has escaped one of the most prevalent causes of structural degeneration. Viewed in their relation to acute disease, the behaviour of intemperate people under pneumonia is suggestive of their unfitness to be profitable lives for an insurance company. The Report of the Collective Investigation Committee on Pneumonia, although only provisional, brings out the fact that the deaths from croupous pneumonia among total abstainers were 11·12 per cent.; among temperate persons, 18·4 per cent.; and among the intemperate, 40·5 per cent.^b An explanation of this high death-rate which is offered is the inability of intemperate persons to sustain the prolonged calorification of this disease—a view which is borne out by Col. Sykes' observation^c that, where one teetotaller is cut off in India, four

^a Tidy. Part I. P. 399.

^b Brit. Med. Jour., Dec. 1st, 1883. P. 1080.

^c Assur. Mag. Vol. VIII., p. 331.

intemperate men lose their lives. The susceptibility of drinking men to insolation is well known, and I would just note in passing that, in the medical history, an attack of delirium tremens is not unfrequently entered as "a touch of sunstroke." *Verbum satis sapienti.*

There are other habits besides those of drinking which prejudice the value of a life, though perhaps not to an equal extent—for example, the use of opium, or tobacco, or even vegetarianism. These matters should be ascertained and duly weighed by a sagacious examiner. His doing so will at least prevent objections on the part of a captious company, and obviate possible discussion at a future time. It is not to be expected that the applicant will reveal them unsolicited. Bearing on this point is the dictum of Lord Mansfield—"The insured (proposer) need not mention what the insurer (examiner) ought to know, what he takes upon himself the knowledge of, or what he waives being informed of. The insurer (examiner) need not be told general topics of speculation."^a And Lord Denman held that a proposed insurer (applicant) was not bound to volunteer statements of all sorts of things; but he was bound to conceal nothing when asked, and to answer all questions truly.^b

In reference to urinary examination, the change which has taken place in cases of life assurance is little less than a revolution. Brinton, writing in 1856, says, with respect to the urinary apparatus—"Careful inquiry will often give us so healthy a history of its function as to allow us to dispense with all further examination, not only of the organs themselves, but even of their secretion. It is only where gout, scarlatina, dropsy, or some other disease or appearance of a like suspicious character specially directs our research towards these structures that we need alarm or annoy our subject of examination by insisting on any further enquiry." About the same time (1857) Dr. George Johnson^c was appointed medical adviser of the Equitable Life Office, an appointment which he held for a period of eighteen years. Soon after his appointment he wished to arrange for testing the urine of every applicant for insurance; but the directors objected that this would cause annoyance and give offence, and they begged that he would test the urine only when he had reason to suspect that something was

^a Taylor. *Med. Jurisprud.* P. 1156.

^b Tidy. *Op. cit.* Part I., p. 399.

^c *Brit. Med. Journ.* Vol. II., p. 419. 1889

wrong. He had to submit to their decision, but he told them that the result would be the acceptance of an uncertain number of lives with latent albuminuria.

Later on, Dr., afterwards Sir, E. Sieveking,^a in 1874, contends that as no medical man reports on a case for life insurance without examining the thorax, so no report for life insurance ought to be considered complete without a definite statement as to the condition of the urine after examination by the physician. At the present day the leading offices, so far from regarding examination of the urine as a proceeding calculated to offend or annoy their clients, take good care to see that their rules on the subject are invariably complied with, even in ordinary cases; and I have had the papers returned to me, and have had to have a second interview with the proposer, owing to my not having tested the urine for sugar and albumin in a case in which it proved to be, as I had anticipated, perfectly normal.

Owing to the increasing frequency of systematic and accurate investigations of the urine the knowledge has been acquired that albumin is often found when there is nothing in the state of health to lead to a suspicion of its existence. The subject of such albuminuria may be completely ignorant that anything is wrong with him. For example, a gentleman whose albuminous urine was rendered nearly solid by nitric acid spoke to Dr. George Johnson in substance as follows:—"I have come to you at the urgent request of my medical attendant; but I am perfectly well, and I want neither advice nor medicine."^b

For many years past the fact that albumin may be abundantly present at one period of the twenty-four hours and entirely absent at another has been publicly demonstrated, and ought to be generally known. This recurrence of albumin occurs day after day in exactly the same sequence. At the period of rising in the morning there is no albumin to be discovered. In an hour or two's time albumin shows itself, increasing in quantity for a while, and then, as the day advances, declines, and becomes usually entirely lost before bedtime is reached. Remaining absent during the night, it returns after rising the next day, and subsequently follows the same order that had been previously observed. Such cases are called "cyclic" by Dr. Pavy. And this condition may

^a Medical Adviser in Life Assurance. P. 152.

^b Brit. Med. Journ. Vol. II., p. 419. 1889.

run on with its repeated diurnal variation for weeks, months, or years without anything further becoming noticeable.^a

To ascertain that a case of albuminuria belongs to the cyclic genus it is manifestly necessary to test the urine, not only after rest in bed and before breakfast, but also during the day and after food and exercise.

There is another group of cases of albuminuria in apparently healthy persons, in which a notable quantity of albumin exists, and is always present, when no history of nephritis can be elicited, no casts of tubules discovered, and none of the cardio-vascular symptoms of Bright's disease recognised. Dr. Pavy says that he would look favourably upon such a case only after it had been under distinct observation for a considerable time without anything wrong becoming developed, and even then he would consider that a decidedly more than ordinary risk existed.^b

It would only be very inexperienced examiners who would fall into the mistake of thinking lightly of "a mere trace of albumin." The granular kidney is the form of renal disease especially associated with small amounts of albumin, and their attention should have been attracted to the coincident conditions of this affection—namely, increased quantity of urine, low specific gravity, and morbid changes in the cardio-vascular system. The granular kidney is constantly shadowed by death from uræmia, from cerebral hæmorrhage, or from inflammation of the serous membranes.

These cases of latent albuminuria—a term, I think, not open to the objections which affect the terms temporary, functional, or physiological—stand in quite different lights prognostically, according as they are regarded as insured or uninsured cases. An albuminuric who has been accepted by a company, and who feels and believes himself to be quite well, and knows he has made provision of some kind for the future, is not as likely to take care of himself as an uninsured, whose rejection has perhaps led to his knowledge of a screw loose where he never suspected it. Frequent medical advice will probably be sought by the latter in trivial ailments, for which the former would scorn it. Dr. Johnson^c has expressed a decided opinion that temporary albuminuria, even when traceable to food, or over-exertion, or exposure to cold, will, if neglected, sooner or later lead to persistent albuminuria, and to fatal disease

^a Brit. Med. Journ. Vol. II., p. 418. 1889.

^b Brit. Med. Journ. Vol. II., p. 418. 1889.

^c Brit. Med. Journ. Dec. 1879. P. 928.

of the kidneys. Thus, I do not think the prognostic rules for carefully watched albuminuria will apply to those who are careless and indifferent about an affection which does not trouble them, and hence I would fear that an optimism as to the results of latent albuminuria derived from the results of well-attended patients in private practice might lead an examiner to take a too lenient view of albuminuria when the question of life insurance is involved. The private practitioner or the consultant can afford to make a more favourable prognosis of albuminuria in apparently healthy persons if they are to have the continual superintendence of obedient and intelligent patients; but the medical examiner of an insurance company who passes an albuminuric life is rather in the position of a station master who lets a train move on with the red lamps against it. Albuminuria is always serious, though it may not always indicate organic disease, and in this respect it has a very apt resemblance to hæmoptysis. The presence of albumin in the urine, unless when "extra-renal," is always pathological, whether we can detect the nature of the pathological change or not. Albumin present in the urine even casually must be regarded as a danger signal.

It is quite true, leaving insurance business aside, that some albuminurics may live a long time, even outlive people with perfectly normal urine, providing they comply with such conditions as (1) no history of Bright's disease in a parent or in any two near relatives; (2) no personal history of past acute nephritis; (3) no history of plumbism or gout; (4) no cardiac hypertrophy, hard pulse, frequent nocturnal micturition, or retinal changes; (5) where the age is not over 40; (6) where the urine does not deposit casts; (7) where there is no chronic dyspepsia; but such lives belong to the class called risky, and the acceptance of risky lives is too speculative a business to formulate general rules for. It is a significant fact that Mr. Eales, of Birmingham, found retinal changes in five out of fourteen cases of supposed temporary albuminuria in persons between the ages of eleven and twenty-eight.^a

The only insurance company that is known to have inquired into the subsequent state of health of persons whose lives had been declined on account of albuminuria is the United States Company in New York.^b Among those who made applications to that office

^a Birmingham Medical Review. 1880.

^b Hilton Fagge. Pract. of Med. Vol. II., p. 2601.

in the three years, 1878-80, there were sixty-nine (or from 10 to 12 per cent. in each year) whose urine was found to be albuminous. Before the end of 1880 four of these persons died, and it is stated by Mr. Munn, one of the medical officers of the company, that the "general appearance of the majority of the others who had been under observation for more than a year was gradually deteriorating." The results of this investigation shows that an insurance company runs a great risk if it neglects to have the urine of all applicants tested.

At a meeting of the Association of American Physicians, held in Washington in 1888, Dr. Tyson, of Philadelphia, a well-known writer on renal diseases, formulated the conditions under which he considered albuminuria might be regarded as not constituting a formal ground for exclusion in life assurance. These conditions are—1. That the applicant presents in all other respects the signs of good health. 2. That the albuminuria is unaccompanied by tube casts. 3. That the quantity of albumin does not exceed one-fifth of the bulk of the specimen of urine examined. 4. That the albumin is absent on rising in the morning (this is not essential). 5. That the density of the total urine for twenty-four hours is not under 1015. 6. That signs of cardiac hypertrophy or high arterial tension are absent. 7. That the applicant is not over forty years of age. 8. That gout in any shape is not present. 9. That retinal changes are absent. But he qualifies all this by the statement that there are few medical examiners competent to make such an examination as these conditions would imply. Whether this is so or not, I think that for this generation, at all events, the traditional notion should hold good that the presence of albumin in the urine, unless clearly extra-renal, should be regarded, without further question, as excluding the case from acceptance by life insurance companies.

In examining the urine it is well to bear in mind that it should in all cases be tested for sugar regardless of the specific gravity. It is only by routine examination of the urine that the early stage of diabetes mellitus can be discovered, when the quantity of glucose is insufficient to raise the specific gravity much, and it is to be borne in mind that glycosuria, or the transient occurrence of sugar in the urine, may at any time pass into confirmed diabetes. If there appears to be any indication of sugar in the urine, the family history should be closely scrutinised, for diabetes comes next to rheumatism in frequency of heredity. Diabetics are ineligible, because, although

some cases live long, the ultimate result is always disastrous. In fact, a diabetic patient may be aptly compared to a tower undermined—its downfall is assured, but none can certainly tell when the catastrophe will occur. The quantity of urine obtainable is often insufficient to float the urinometer freely. In such a case the urine may be diluted with distilled water, and the last figure of the specific gravity of the mixed fluids multiplied by their united volumes. Thus, if we add to half an ounce of urine one and a half ounces of distilled water, and the specific gravity of this mixture is 1,007, then 7 multiplied by 4 gives the specific gravity of the unmixed urine as 1028.*

It might seem to many that the discussion of such a subject as the acceptance of cases of damaged heart is preposterous and irrelevant, but the reading of Sir A. Clark's paper at Brighton (1886) on "Cases of Valvular Disease of the Heart, known to have existed for over Five Years without causing Serious Symptoms,"^b has raised the question in a very practical manner. This remarkable essay was based on notes of 634 of his private patients by Sir Andrew Clark, who put his note-books into the retort of criticism, and has given us the benefit of the distillate. The result of the analysis goes to show that there exist multitudes of persons with chronic valvular disease of the heart, who not only suffer no inconvenience therefrom, but are also capable of discharging the duties and enjoying the pleasures of life.

The first of his cases may be quoted at length as a type of the class referred to. In the early part of 1842 the house-governor of one of the largest London hospitals being about to marry, petitioned the committee for rooms wherein to dwell with his wife, and proceeded to insure his life. The office refused to accept the insurance upon any terms, and in reply to the urgent questions of the candidate, who averred that in the whole course of his life he had never been ill, said that he had a serious disease of the heart in the form of mitral regurgitation. To the further question of the proposer whether he would live six months, the reply was that he might. Then the house-governor, with the characteristic inaccuracy of patients, informed the committee that he had a mortal disease of the heart, that he could not live six months, and that he withdrew his application for rooms. The committee considered the matter, and fearing that the house-governor might die

* Ralfe, *Dis. of the Kidneys*. P. 53.

^b *Brit. Med. Journ.* Vol. I., p. 280. 1887.

suddenly in the wards, they superannuated him; and furthermore, believing that he had but a short time to live, they superannuated him on full pay. In 1854 this gentleman consulted Sir A. Clark for indigestion, who discovered that he had a loud, rasping, systolic murmur, heard not only in the mitral area, but all over the left side of the chest. Beyond the symptoms of indigestion, he exhibited no other evidence than the murmur of the existence of cardiac disease. Without being particularly careful, he continued to live, work, and enjoy life until 1874, when, at an advanced age, he died of an attack of acute bronchitis. Thus, for thirty-two years after having been condemned to die of heart disease, he continued to enjoy more than average health, to discharge the duties of a town rectory, and to draw his full pay from the hospital.

The conditions of a favourable prognosis differ for different valves, and for each valve according to the character of the lesion. A comparatively small "loading" might justify assurance in a favourable case of mitral regurgitant disease, whilst no "loading," however heavy, for a time however short, would warrant acceptance of a case of regurgitant disease of the aortic valves. If in the former case the risks to be incurred were to be reckoned as one, then in the latter case the risks to be incurred would have to be reckoned as a thousand. The person with aortic might possibly live as long as the person with mitral disease, but there would be such small security for the transaction that, considering the possibilities of disaster, it could not be considered as other than a reckless speculation.*

The conditions which, according to the experience and judgment of Sir A. Clark, would justify a case of mitral regurgitant disease in sustaining an application for life assurance, are as follows, assuming on the part of the patient obedience to properly-adjusted rules of health:—(a) Good general health; (b) just habits of living; (c) no exceptional liability to rheumatic or to catarrhal affection; (d) origin of the valvular lesion independently of degeneration; (e) existence of the valvular lesion without change for over three years; (f) sound ventricles of moderate frequency and general regularity in action; (g) sound arteries, with a normal amount of blood and tension in the smaller vessels; (h) free course of blood through the cervical veins; (i) freedom from pulmonary, hepatic, and renal congestion.

* *Brit. Med. Journ.* Vol. I., p. 371. 1887.

There are several objections which at once present themselves to the acceptance of damaged hearts, although we probably each know that a creaking pump is capable of many years of moderate wear and tear. Sir A. Clark himself admits^a that he has nothing to do with any life assurance office, though he frequently has submitted to him cases for arbitration. As in the cases of latent albuminuria, the comfortable or wealthy classes, who are independent of a prospective provision for their families, are in a different category as to prognosis from those who, damaged as they are, having passed a medical investigation, believe themselves sound, knowing and feeling nothing to the contrary. These latter eat and drink, and do things they would not do if they knew they were walking along the brink of a precipice. Looked at from the point of view of the insurance company, the thing to be considered is not so much the value of the individual life, as the value of a mass of such lives compared with a mass of lives without this damage, and viewed from this aspect the office that accepts a life with an organic heart-murmur runs a risk at present not calculated for in its rates. Some years ago an office of high repute^b made an experiment of taking lives with heart-bruit, but otherwise in good health. This office, however, in a few years discontinued the practice, as it was found that the lives most largely insured fell in before their expectancy; and though by reason of the heavy loading, the office might not ultimately be a loser on the total of these lives, yet enough damaged lives did not present themselves to form a separate class which could be calculated for.

Sir A. Clark is perfectly logical in carrying his conclusions to their legitimate outcome; but my contention is that, however applicable these conclusions are to private practice, they are not equally so to insurance practice, inasmuch as in the former case there is at all events a likelihood of continuous oversight of the patient, while in the latter case the supervision is of a casual and temporary nature, while the acceptors of the risk remain helplessly saddled with it. It is now generally accepted that Laennec, and subsequently the pathological school, greatly exaggerated the unfavourable prognostic value of heart-murmurs. We must always be careful not to over-estimate the importance of the murmur as a fact, nor to pay too much attention to the mere existence of the sound and too little to the circumstances in which it occurs. Many

^a Brit. Med. Journ. Vol. I., p. 382. 1887.

^b Brit. Med. Journ. Vol. I., p. 539. 1887.

a case of chronic valvular disease goes on for a long time, provided compensation—which may be taken to mean accommodation of the muscular power of the heart to adverse circumstances—occurs. But compensation is rather a condition to be hoped for than a reality procurable at will. There are no means by which, in any recent case, its advent can be foretold with certainty. When secondary symptoms postpone their appearance we are willing to assume compensation has taken place, but we can neither guarantee its arrival nor insure its permanence.

The opinion that an applicant with damaged mitral valve can be accepted by an insurance office is probably one rather too far in advance of the present practice of the various offices to be judiciously acted on. As it cannot be denied that even the least amount of valvular disease of the heart *may* prevent a man from living out his expectancy, it is only right that the insurance company should have the benefit of the doubt, and not the applicant. Even supposing, first of all, that the mitral disease shall have existed independently of degeneration in the heart; secondly, that it shall have existed for two years; thirdly, that the ventricles shall be in good order; fourthly, that the arteries shall be sound; fifthly, that there is no persistent basic congestion, or recurrent hepatic stasis; that the patient should not be liable to colds which hang about him; and, finally, that his general health shall be good, within which limitations Sir A. Clark* is prepared to say that the mitral disease will not shorten life—the application of this doctrine to life assurance would require very great discrimination, and would be a dangerous one to inculcate among any but the most highly informed and most careful examiners.

ART IX.—*The Lesions of the Throat in Leprosy.* By JOHN D. HILLIS, F.R.C.S.I.; M.R.I.A.

I HAVE recently had the opportunity of examining with the laryngoscope the throats of over one hundred persons suffering from the different forms of leprosy, the notes of whose cases are in my possession. A synopsis, in tabular form, has been published in the *Journal of Laryngology*, but it has been suggested to me that a fuller clinical account might be of interest at the present time, when everything relating to the subject of leprosy is exciting so much attention at home and abroad. This is owing, doubtless, to

* *Brit. Med. Journ.* Vol. I., p. 382. 1887.

the widespread distribution of the disease in countries the most varied as regards climate, race, and geographical position, the fatal nature of leprosy and its attendant fearful disfigurements, as well as the marked change of opinion gaining ground as to its contagiousness—more especially in connection with Arning's celebrated inoculation case at Honolulu.

My examinations were made in May, 1889, at the Leper Asylum of British Guiana, of which during ten years (1876–1886) I was the chief physician, and where such abundant material and facilities for the study of leprosy exist. Some of the lepers have been inmates of the asylum for a longer period than this, and their cases are recorded in my work on Leprosy.* I am therefore in a position to fill in their life-histories, and in many particulars complete the picture of the manner in which the air-passages are affected, from the earliest commencement of leprosy to its termination, more completely than has hitherto been attempted.

The asylum is situated on the sea-shore in the most healthy part of the colony. Every comfort is provided for the lepers at a cost to the tax-payers of over £6,000 per annum. They are housed in neat detached cottages of four beds each, with ample air-spaces, and placed *en echelon* in order to have the full benefit of the sea-breeze. Their religious wants are provided for, and the children taught at school. The dietary is a good and liberal one.

Leprosy was originally introduced by slaves from Africa as long ago as 1798, and has been a source of anxiety to the inhabitants ever since. The present population numbers 250,000, and is composed of blacks, coolies imported from the East Indies for the plantations, Portuguese, Europeans, &c. The number of lepers in 1889 was estimated at 1,000, or 1 in every 250 of the population. Five hundred lepers were accommodated at the asylum last year, but the others were not interfered with, compulsory segregation not being insisted on by the local government, even if permitted by the authorities at the Colonial Office.

There are, it is well known, two distinct forms of leprosy—(1) the so-called anæsthetic or nerve-lepra, to which I have applied the term non-tuberculated; and (2) tuberculated lepra. A third form is described in books—mixed lepra, where the signs and symptoms of both forms are present in the same person, but which need not further be alluded to.

(1.) *Non-tuberculated Leprosy*.—In all tropical countries cases of

* Leprosy in B. Guiana. J. & A. Churchill. 1881.

nerve-lepra greatly outnumber those of tubercular leprosy, the admissions of the latter into the asylums being 21 per cent. against 62 per cent. of the former. In European countries the reverse holds good. Nerve-lepra is characterised by an eruption on the skin, the distinguishing feature being loss of cutaneous sensibility, due to a diseased condition of the superficial nerves. The eruption appears as single oval patches on different parts of the body, nearly always on the face. Extensive ulcerations also occur, and parts of the fingers and toes, even an entire foot or hand, drop off from a kind of dry gangrene.

The throat is not affected in this form till late in the disease, and when it has been in existence for more than five years, the average duration being fifteen years. The lesion consists of complete loss of sensibility about the soft palate, uvula, and back of the pharynx, not amounting to paralysis, but seriously interfering with the proper functions of the muscles of the throat affected by it, permitting of regurgitation through the nostrils, and causing difficulty in swallowing. The anæsthesia was so great in the parts mentioned that the patients did not wince when a sharp instrument was plunged deeply into the parts.

Microscopical examination shows that this condition is the result of leprous deposit, consisting of leper cells containing bacilli within the sheaths of the nerves, and between the individual nerve-fibres, leading ultimately to their degeneration.

(2.) *Tuberculated Lepra*.—Sir Morell Mackenzie* has written a valuable report on throat leprosy of European countries, based on cases examined by him in Norway and other places. Gibbs, Schrötter, and Wolff have also written on the subject, but my own paper was, I believed, the first systematic description that has appeared with reference to tropical leprosy. It is true the pathological changes are in the main the same in all climates, but it will be seen that some differences exist, and are worth recording.

Tubercular lepra, it should be stated, begins with certain well-defined premonitory symptoms—such as repeated attacks of malaria, or febrile attacks not unlike that caused by malaria. Then drowsiness supervenes, alternating with troublesome periodical sweating, the skin remaining in a greasy condition. Bleeding from the nose is also a prominent symptom, continuing until the angry-looking raised patches constituting the skin-eruption in this form make their appearance. The latter is accompanied by a rise of

* *Journal of Laryngology*. Oct., 1887.

temperature, and is succeeded by tubercles, from which the disease derives its name.

The first throat symptoms set in during one of the febrile attacks referred to—which are distinctly leprous in character, and called leprotic fever—the duration of the disease having been over two years. The fauces, uvula, and back part of throat become uniformly red and congested, as in acute pharyngitis, or glazed-looking patches may be seen at the back of the pharynx and roof of mouth, having raised crescentic edges. Such patches—when combined with the thickened velvety condition of the mucous membrane of the nose, invariably found at the same time, and which explains the epistaxis—are pathognomonic of leprosy. These symptoms may subside, but never entirely disappear. After a varying interval of some months the interior of the mouth will be found to present a dull-white, pallid appearance, extending not only to the larynx, but even to the bifurcation of the trachea. Some writers have compared the appearance to a “throat smeared over with tallow,” but my cases had more the bloodless look found in pernicious anæmia, although no symptoms of anæmia may be otherwise present at the time. The colour is analogous to, and reminded me of, the gray tint found in persons with laryngeal phthisis.

The next stage may be said to commence with the formation of tubercles in the air-passages, appearing first as small red papules, not larger than a pin's head, but rapidly increasing in size, the rapidity of growth depending on the extent of blood contamination going on. Externally the leper will probably be covered with tubercular masses on the face, extremities, and parts of the trunk. In the mouth tubercles first appear on the dorsum of the tongue, or the tip will be found studded with small, wart-like growths. They next are found on the pillars of the fauces, the uvula, inside the cheeks, and roof of mouth. Tubercles also form in the nasal fossæ and choanæ, and block up the passages. Hæmorrhage from the nose still takes place, but from a different source—namely, tubercles in process of softening, by which a constant bloody discharge from the nostrils is kept up. The tongue is a favourite site for the tubercles, and here they grow very rapidly. I have counted as many as eight large tubercles in this situation, some of which had attained the size of a hen's egg in a remarkably short time.

The uvula is nearly always attacked; a tubercle will form at its

tip, giving it a bulbous appearance, or cause it to hang down and rest on the tongue. Or one may form at its junction with the velum, and giving rise to surrounding œdema or hypertrophy will cause it to be dragged up, or to either side, in a very characteristic manner. Again, ulceration may set in and extend until the entire uvula is destroyed, and nothing remains but a round stump, or clean white cicatrix. Troublesome ulcers are met with at the side of the tongue, inside the cheeks, or further back in the pharynx, having ill-defined edges and a grayish slough.

The epiglottis becomes enlarged in every direction from infiltration, or hypertrophy of the sub-mucous connective tissue—in the earlier stages having an œdematous look. It may be plainly seen whenever the patient opens his mouth. The order of events with regard to it appear to be œdema or infiltration, tuberculation, ulceration; later on it may be entirely destroyed. The absence of the epiglottis, I may remark, seemed to cause no inconvenience in swallowing. Tubercles of all shapes may be met with on the free edge; when they form only on the one side they give the organ a peculiar lop-sided appearance—a condition often recorded in my notes. On its under surface varicose veins may be seen. In a Portuguese the upper surface of the epiglottis was the seat of a large tubercle—divided down its centre by a deep furrow—which completely shut out the larynx from view. A view of the interior of the larynx was often prevented by a similar cause; the parts forming the entrance to the latter are similarly affected. The ary-tænoids and inter-ary-tænoid space become enlarged and distorted. In one patient the ventricular bands presented a bright red appearance, in marked contrast to the surrounding pallor, which remains to the end.

The vocal cords I have seen in a state of ulceration, or discolored a dirty yellow. In more advanced cases they are lost in the general disorganisation that takes place, the structures of the larynx being changed into a shapeless mass, leaving a passage through which air can barely enter. After death I have found what was the glottis contracted in this manner, and yet so gradual is the process that tracheotomy is hardly ever required.

One poor fellow I examined just before leaving was an East Indian, aged fifty years, a leper for nine years, and in the last stages of the disease. There was some dyspnœa, but not calling for interference. He spoke in a whisper, and very little air was entering the lungs. The pillars of the fauces were adherent to

the pharynx; his uvula had been destroyed. There was an atrophied condition of the pharynx generally, and only a stump of the epiglottis remained. His right arytaenoid was enlarged, and the vocal cords ulcerated and fixed, and partly overlapped by the thickened ventricular bands. The thyroid cartilage could be felt thickened, and glands in the side of the neck were swollen, and an abscess was discharging apparently in connection with diseased cartilage—in fact, a leprous perichondritis was present. The poor fellow, I heard, died a few days after.

The minute morbid anatomy of leprosy has been fully treated of in another place.^a Whilst we are indebted to Virchow^b for our earliest knowledge of the pathology of leprosy, of English writers Dr. George Thin has done more than any other author to elucidate its microscopical anatomy, and describe the bacillus of Armæur Hansen. His last paper in the *British Medical Journal*^c relates more particularly to leprosy of the larynx, and in it Thin observes that the lesions I have been describing are due in the first place to infiltration into the sub-mucous tissue of leprous elements, and to some extent to œdema and hypertrophy of the connective tissue. The leprous elements he found to consist of masses of cells of varying size; the epithelium and cartilage remain unaltered. When stained with fuchsin, and a contrast stain of methylene-blue, the cells are found to contain bacilli—in some of the larger cells a great many of them. The bacilli in sections taken from the larynx were found to be identical with the bacilli found in tubercles excised from other parts of the body. The bacillus lepræ has been met with in nearly every part of the world where leprosy prevails. Thin found it in material from China and Australia, and some I sent him from Demerara, and figured them in his papers. By his kindness I was enabled to show some specimens to the Pathological Society, referred to in Vol. XXXIV. of the "Transactions."

The scientific world are not decided as to the exact part played by the microbe in the propagation of leprosy, which remains one of the important leprosy problems yet unsolved.

^a Loc. cit. P. 54.

^b Archiv. Bd. XXVI, p. 44. 1863.

^c July 19th, 1884.

ART. X.—*Suprapubic Lithotomy in relation to the Treatment of Encysted Calculus.** By J. S. M'ARDLE, F.R.C.S.I.; Fellow of the Royal Academy of Medicine in Ireland; Surgeon and Lecturer on Surgery, St. Vincent's Hospital.

THIS is a subject which I believe deserves special attention. It derives its chief interest from the fact that it is possible, owing to the perfection of this method of lithotomy, to deal satisfactorily with calculi which can be reached, but cannot be safely removed through a perineal opening.

The case which I am about to relate was one of so grave a nature, and so surrounded by elements of danger, that I do not hesitate to detail at some length the previous history, the operation, the course, and after-treatment.

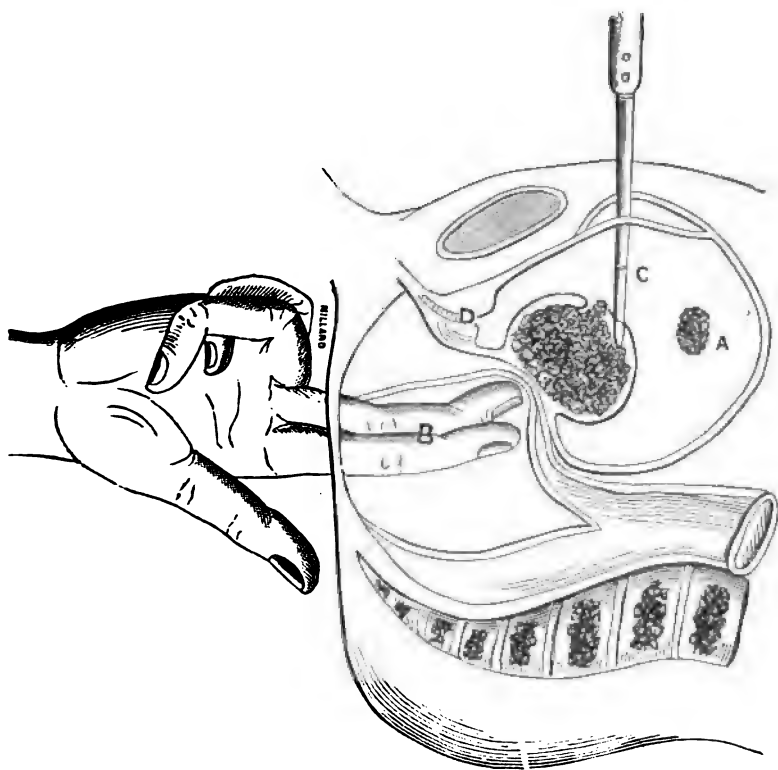
CASE.—The patient, Mr. C., aged forty-two, came under my care on the 5th of July, 1889, giving the following history:—Since 1874 he has had symptoms of stone, but until 1888 he was able to bear the inconvenience. Early in 1888 he was obliged to undergo a lateral lithotomy, which gave him only temporary relief, as some five months before he came under my care he had been subjected to lithotrity, which afforded him only momentary relief also. He came under my care in the following condition:—He was pale and pasty-looking, with œdema of lower lids and of legs; quick, irregular, intermittent pulse, and hurried respiration. Micturition was frequent and very painful, pain being referred to anterior half of urethra. The urine was loaded with phosphates, contained pus in large quantity, and when allowed to stand the supernatant fluid contained a large amount of albumen. He had frequent vomiting, and cold perspirations frequently broke out over the upper half of his body, more especially about his head and face. When he attempted to pass water he grasped the bed and became almost convulsed owing to the extreme torture he suffered on these occasions. On examining the bladder, I found a small free calculus the moment the sound entered the bladder; but, as this was not enough to account for the great distress, with the sound still in the bladder, I made a rectal examination, and discovered behind, and to the right of the prostate, a hard nodulated mass, which, on firm pressure above the pubes, I made out to be ovoid in outline, with long axis antero-posterior, somewhat nodular, and very firm, and occupying the region between the right ureter and the posterior edge of the prostate, which it indented.

* Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, January 17, 1890. [For the discussion on this paper see page 263.]

With the sound I could detect occasionally a point on the vesical side of this mass, which gave undeniable evidence of its being calculous.

On July 12th Sir William Stokes saw the patient with me, and after careful examination we decided on the suprapubic operation, and Dr. Cox, who examined the case for me, assured me there was no lesion of the kidney which contra-indicated surgical measures. The encouragement thus given by one whose opinion I value highly induced me to undertake a grave operation on a patient already so broken down.

Fig. 1



A Free calculus.

B Fingers raising encysted calculus towards abdominal wound.

C Hernia knife cutting wall of cyst.

Operation.—On July 13th the following operation was performed:—After introducing Petersen's bag, and distending it with 10 ounces of boracic solution, 8 ounces of a similar fluid were injected into the bladder, an incision $2\frac{1}{2}$ inches in length was made above the pubes, laying bare the cellulo-fatty tissue, which I scraped through. Reaching the bladder I

grasped it with catch forceps, and incised it. After allowing the boracic solution to flow I passed two suspensory sutures through each lip of the vesical wound. Enlarging the opening, I introduced my left index finger, and at once came upon the loose calculus (Fig. 3 A), which I removed with a small scoop. I now explored the right half of the base of the bladder, where I discovered a mass projecting into the trigone on that side, and corresponding to the rectal prominence above noted. (*Vide* Fig. 1.) Near the anterior end of this mass I found a small calculous projection piercing the mucous membrane; round this could be felt a dense ring of vesical tissue, on which the finger nail could make no impression. I endeavoured, with a blunt elevator, to detach this ring, but this also failed. At this juncture the spicula (Fig. 3 B) broke off at its base, leaving us, as a guide to the stone, a circular opening about an eighth of an inch in diameter. Through this I again failed to pass the director, and, as the depth of the calculus from the surface rendered manipulation difficult, Surgeon-Major O'Farrell (who kindly assisted me at the operation) gave me valuable aid by raising and supporting the base of the bladder, as shown at Fig. 1 B. This digital support enabled me to grasp the edge of the opening with a catch forceps. Sir W. Stokes took charge of this forceps, and I passed a hernia knife, which I guided by my left index finger, through the opening and under the dense edge of the capsule, which I slit first backwards and then forwards so as to lay bare the upper surface of a large stone. Withdrawing the knife, I passed into the sac—first on one side, then on the other—the blades of a lithotomy forceps, which I now locked, and endeavoured to remove the mass. Under pressure of the forceps the mass broke up into what proved to be five distinct and faceted calculi, one of which, coming directly in the line of pressure, yielded, as in Fig. 2 A, while another chipped off as at Fig. 2 B. The complete removal of the

Fig. 2 A

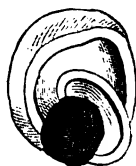
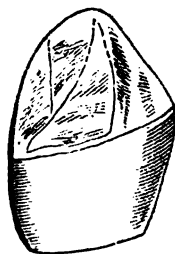


Fig. 2 B



débris was rapidly done, the sac being thoroughly freed of a calculous lining which here and there adhered firmly. After washing out the bladder with boracic solution I applied deep catgut and superficial silk sutures at the upper angle of the wound; at the lower angle I closed the

cellular interval by suturing the bladder to the lips of the abdominal wound, and passed one deep suture across the lower angle. A large suprapubic drainage tube was laid in, as the patient, owing to prostatic irritability, could not endure a catheter, and antiseptic dressings were applied.

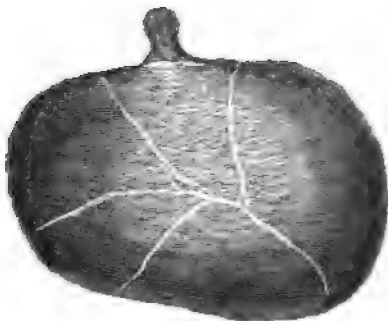
Course and Treatment.—I need not detail at length the course of this case, which (considering the condition of the patient prior to operation, and having regard to the gravity of the operation) was, on the whole, favourable until July 26th (thirteen days after operation), when, at 10 p.m., the note made is—"Patient unconscious; pulse irregular, intermittent, and extremely quick; breathing stertorous; cannot swallow; ashen appearance of face; pupils widely dilated and insensible to light; skin cold and clammy." Up to this, irrigation of the bladder had been carried out regularly with warm boracic solution, and the muco-pus, which had been copious in the beginning, had almost disappeared, and the urine itself had become fairly normal. At this stage, however, the amount lessened, and it became dark and ammoniacal. Finding him in this condition, I ordered a large enema of soap and water, a saline purge, which was followed by large doses of citrate of ammonia, and counter-irritation over the loins and nape of neck, first with mustard, which seemed to have no effect, and later with chloroform, the application of which soon restored consciousness.

From this date onwards there was a gradual return of strength. In the anxious period which intervened between the operation and the time when recovery became assured, I received valuable aid from my friend and colleague, Dr. M'Hugh. Mr. Tobin, whose absence at the time of operation I very much regretted, frequently saw the case with me, and I availed myself of many of his suggestions. The accompanying Fig. 3 A shows the free calculus, and 3 B the encysted one, as broken by the forceps.

Fig. 3 A



Fig. 3 B



In reviewing the notes of this case I cannot but think that, had the patient succumbed on that 26th of July, death would have

been recorded as the result of exhaustion. In all the cases in which death occurred after the third or fourth day, with symptoms of collapse, and where a *post mortem* was allowed, definite pathological conditions sufficient to account for the result were discovered—intestinal nephritis, renal abscess, sloughing of rectal wall, or septic infection from an unhealthy wound. Such terms as shock, exhaustion, and collapse, have no surgical significance; they are terms applied to the cause, whereas they are but erratic names for a more or less indefinite array of symptoms, and the sooner they are relegated to their proper position the better for surgical science.

NEW PROCEDURES.

Before entering on a discussion of some points of interest in the *technique* of the operation, I would briefly allude (not with the intention, indeed, of advocating them, but in the spirit of a dissentient) to recent so-called improvements on the method of Guyon. Langenbuch's sub-pubic operation (*Centralblatt für Chir.*, 27, 1888) is not likely to become fashionable, when we recollect that to reach the bladder one must dissect through the cellulose-vascular tissue between the pubes and the penis before the stone is reached, and then a hole must be made for drainage at the side of the penis.

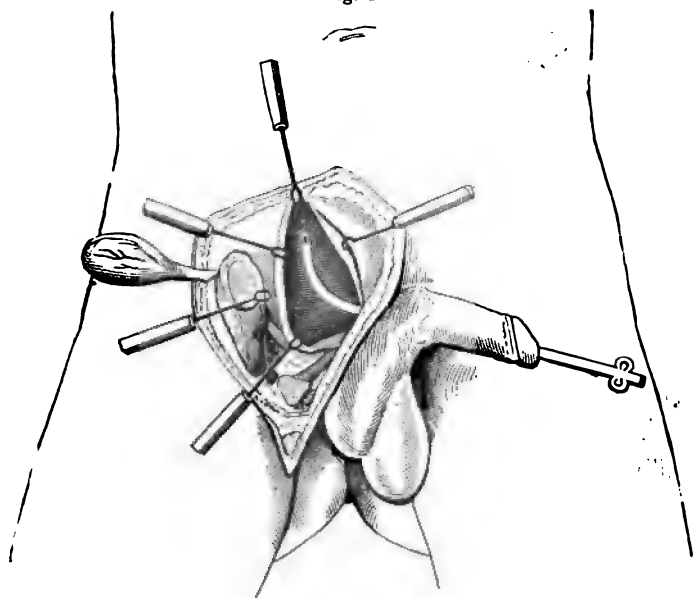
The wanton invasion of the vesico-pubic cellular tissue which this procedure necessitates would alone condemn it; but when we consider the narrow limits of the field of operation, one marvels that such a method should engage the serious attention of any surgeon of experience, and to advocate it would imply an extreme disregard for human life.

Koch (*Cent. für Chir.*, 37, 1888; *Berl. klin. Woch.*, 20, 1888) describes an operation for opening through the symphysis.

On a par with this is a recommendation from Niehans (*Cent. für Chir.*, 29, 1888), that the pubic bones should be temporarily resected to allow free entrance to the bladder. No epithet would be too strong to apply to a procedure fraught with so many dangers as this, denunciation; however strong, would not be unjust in the face of a danger arising from the desire to be singular in the method of mutilation of our fellow-beings. The genius of invention is all very well if it confines itself to the imagination of heroic operations, such as that shown in Fig. 4, taken from the *Centralblatt für Chirurgie*. When for their advocacy it becomes necessary to needlessly maim the unoffending lower animals, one can but stand by and blush for the frailties of man; but when man himself is to

be made the subject of experiment, then it is time for surgeons to remember that insanity in surgery must be treated as elsewhere, and no more heed should be taken of recommendations such as these than of the vapourings of our every-day lunatic. This is strong language, but justified, when one grasps the full meaning of tearing away the front wall of the pelvis and groping through the cellular tissue thereof when the bladder is so accessible elsewhere. I cannot imagine a surer way of producing pelvic cellulitis, urinary infiltration, and all the ills that attend the most clumsily conducted lithotomy.

Fig. 4



Very different in its inception, and indeed in all its bearing, is the method carried to perfection by Rydygier (*Wien. med. Woch.*, April 14 and 21). This is the intra-peritoneal method. With the object of utilising the plastic properties of the peritoneum, Rydygier has recommended the section of the bladder to be made through its serous coat.

This allows sufficient room for the removal of the largest calculi, and secures much more rapid healing of the vesical wound than any other method. It requires, however, for its successful accomplishment, perfect aseptic arrangements at the operation, and the

bladder must not be in a state of disease likely to cause infection of the peritoneum.

If the bladder be irritable, the proper drainage cannot be carried out through the urethra; and if there be suppurative cystitis present, a thorough irrigation, so necessary in such cases, is out of the question in intra-peritoneal section.

For cases in which, from impassable stricture, the bladder cannot be distended, or when rectal dilatation is not possible, this operation may prove useful; but, with its many dangers, it cannot be accepted as a substitute for Guyon's method.

RECTAL DISTENSION.

Some time ago I listened, with interest and attention, to a communication made to this Section; and the subject of rectal distension being incidentally mentioned, an important question was asked, but remained unanswered, and that was—How much fluid should be used in the dilatation?

The experimental researches of Strong (*Annals of Surgery*, 1888, p. 22) show that 10 to 12 oz. for the rectum and 8 to 10 for the bladder render all the assistance necessary for the rapid and easy conduction of the operation. In reference to the question of rectal distension it may be well to recall the experiences of some of our contemporaries. Nicaise (*Bul. et Mém. Soc. de Chir.*, Paris, 1888, 676) details a case in which the balloon was distended with 340 grammes of fluid, and a tear of the rectum exposing the posterior wall of the bladder caused death on the sixteenth day. Routier mentions a case in which sloughing of a piece of the anterior wall of the rectum the size of a five shilling piece caused death on the twelfth day. A. Després called attention to two cases in which the peritoneum was ruptured; in each case distension with 450 grammes caused tearing of anterior rectal wall. Bouilly (*Taille Hypogastrique*, Paris, 1883) mentions a case in which rupture of the rectum took place while a preparatory distension was being carried out in a child.

These cases teach us that we should be slow to attribute death to shock, as in very many cases of supposed death from collapse the *post mortem* disclosed an interstitial nephritis or general pyæmic infection, and this latter in cases in which, in the interval between operation and death, the ordinary symptoms of this affection were absent.

It is only now, when facts like the foregoing are brought to light, that the dangers attendant on hyperdistension of the rectum

become apparent, and call for a more careful investigation of the question. How much can we inject with safety? There is manifestly some room for doubt as to the wisdom of injecting from four to six hundred grammes of fluid into a Petersen's balloon, especially when such men as Després (*Bul. et Mém., Soc. de Chir., Paris*) make use of the following expressions in reference to it:—"There is, therefore, no necessity for the balloon of Petersen, which, to my mind (excuse the expression), is an asinine guide with which all true surgeons should be able to dispense." The same surgeon, who is also an enemy of antiseptics, and who avoids injecting the bladder, says later of Petersen's balloon, "Rest assured, it will before long go to join in the museum the old instruments of our forefathers that presently nobody will hear of."

On the other hand, Segon (*Bul. et Mém., Soc. Chir., Paris, 1838*), says:—"To Petersen's balloon, to the facility and security it gives, is due the present position of suprapubic lithotomy." Some writers say that 600 grms. of fluid can be injected with safety. Le Dentu says that injury occurs where—1st, bowel is congenitally narrowed; 2nd, in cases of diseased walls; 3rd, when walls are weak. He, therefore, limits the fluid to 300 grms., and remarks that the bladder bears the over-distension better than the rectum.

A very important point in reference to this part of the subject has been demonstrated by Strong—viz., that injection of the rectal bag must be made before distension of the bladder, as otherwise the necessary elevation of the peritoneum will not take place. There can be no doubt that the support afforded by a rectal bag renders the operation easier of accomplishment, the only inconvenience being the great engorgement of the suprapubic venous plexus, injury to which has led to copious hæmorrhage and subsequent delay in healing. Once the bladder is reached, slight evacuation relieves the engorgement, and the veins can then be kept out of the way by retractors. It frequently becomes necessary to partially or wholly empty the balloon after the bladder is freely opened, as intravesical manipulation is greatly interfered with by its presence. When calculi at the trigone or prostate are to be dealt with, digital pressure (as shown in Fig. 1), as used in my last case, will become necessary, and then removal of the bag is advisable. I cannot conclude my reference to this part of the subject without noting that Assendelft (whose personal experience in suprapubic lithotomy is extremely large) rarely used Petersen's balloon, and never wounded the peritoneum.

DISTENSION OF THE BLADDER.

All surgeons are agreed that fluid in the bladder facilitates the operation. Even Després, who objects to the injection of fluid, insists on the urine being retained. There is in the distension of the bladder a danger to be guarded against, and the guide suggested by Sir H. Thompson is untrustworthy. He remarks that the sensation of resistance should guide the surgeon as to the amount to be injected. It is possible that an exquisite sense of touch might be a safe guide; but most surgeons can better appreciate measured volumes of fluid than the amount of resistance offered to its injection by a thin-walled viscus, and many will agree with M. Guyon, when he says that the amount should not exceed 320 to 350 grammes, and that this is sufficient in the adult. M. Guyon has, like most of us, depended on the sensation of the resistance offered by the bladder to the ingoing fluid; but since he ruptured a bladder, as he says, "without making any effort," he takes care to adopt the safer and more scientific method of using measured quantities of fluid. Kremer (*Inaug. Dissert., Erlangen, 1887*) recommends distension by gradually raising an irrigator above the patient. In some cases of contracted and hypertrophied, or even irritable bladder, the amount above-mentioned cannot be introduced with safety, and in many cases it becomes necessary to prepare the bladder by gradual distension.

(*To be continued.*)

ART. XI.—*The Vagus Treatment of Cholera, as exemplified in returns from the Cholera Hospitals of Malta, during the Epidemic of 1887.** By ALEXANDER HARKIN, M.D., F.R.C.S.; Consulting Physician, Mater Infirmorum Hospital, Belfast; Membre de la Société Française d'Hygiène, Paris et Quebec.

IN the domain of medicine, as in the outer world, the subject of epidemic cholera is one of supreme and abiding interest; so little is known of its intimate nature, of the laws that preside over its origin and diffusion, of its pathology, and how much less of any successful plan of treatment, that, when assured of its pestilential presence in any populous district, we at once assume that a large percentage, seldom less, frequently more, than one-half of those affected shall inevitably perish. And whether it be in the Delta

* Read before the Ulster Medical Society, Wednesday, January 15, 1890.

of the Ganges, its permanent abode, should the afflicted refuse assistance or to be scientifically treated. or in this country, or on the Continent, where all the resources of civilisation are at their command, the result is practically the same.

Owing possibly to the utter failure of any remedy, external or internal, for this dire disorder, up to the present moment, the minds of the medical profession have been almost exclusively directed to preventive remedies, and for this, perhaps, as for other reasons, the therapeusis of cholera has not kept pace with that of other epidemics.

Sanitary measures have in this instance almost superseded sanatory considerations, and to such an extent that in the dissertations of some of the leading advocates of State Medicine, sanitation is gravely announced as the panacea for all epidemic disorders, and one that in the course of time will assuredly eliminate from our nosological lists the whole train of epidemic diseases.

These enthusiasts seem to have adopted for their motto, and emblazoned on their "banner with the strange device," *Sanitas Sanitatum et omnia Sanitas*; and yet I fear that the saying of the Wise Man, *Vanitas Vanitatum et omnia Vanitas*, is not altogether obsolete in their regard, but fairly applicable to many of their most confident vaticinations. I am not one unfairly to decry the value of sanitation or scientific hygiene—I should rather prefer that sanitary and therapeutic measures should go hand in hand; but in the recent experience of a fatal form of typhoid fever, which numbered many victims in some of the finest cities of America, France and Ireland, and in the actual presence of epidemic influenza now prostrating its thousands in the British Isles, on the continents of Europe and America, the impotence of mere sanitary arrangements to repel an attack of contagious disorder must be hopelessly apparent.*

In the very valuable Report of Professor Pisani to the Supreme Government, as principal medical officer of Malta, upon the epidemic of cholera in that island in 1887, we may find a very instructive commentary upon the relation that subsists between sanitation and epidemic disease. That Report demonstrates, as far as it goes,

*This conviction appears to be entertained by some of the most enlightened organs of public opinion, as we find in an able article on Influenza in the *Standard*, of the 4th of January last, this sentence—"And those who hope that in the case of this, as of more serious scourges, the comparative excellence of English sanitation would secure us absolute immunity, have to confess that they have carried faith in drainage a little too far!"

that while hygienic remedies may fairly be accredited with diminishing the gross number attacked by cholera, as compared with previous visitations, they have no power whatever of preventing its invasion or lessening its virulence.

Professor Pisani, who is a sanguine sanitarian, states in the final paragraph of his Report, which sums up his experience of several epidemics—"Experience has taught that it is not in our power to prevent the importation of the germs of cholera, that on good sanitation we should exclusively rely; let the soil be sterilized, let the seed fall on barren rock and it will not germinate whether the season be favourable or not."*

Looking for a moment at the history of epidemics of cholera in Malta, antecedent to that of 1887, as recorded by Dr. Pisani, we find that after the epidemic of 1865, which Dr. Sutherland considered the most fatal up to that date on record, every measure that sanitary science could suggest or engineering skill effect was carried out, yet, notwithstanding, the cholera unheeding swept down upon Malta in 1887 in a more malignant form than ever, for out of 626 cases only 164 recovered—a death-rate of 73·5 per cent. In the epidemic of 1865, after which Dr. Sutherland and the eminent engineer, Osbert Chadwick, visited the island, the mortality stood only at 60 per cent.; while in 1867, an intermediate visitation, there were only 403 attacks with 259 deaths—a mortality of only 64 per cent., and this before the sanitary improvements were completed. Still Dr. Pisani and Professor Pettenkofer (a professional sanitarian) are of opinion that but for these sanitary changes effected in the town of Valetta, the mortality from cholera would have been *five times greater*, and that susceptibility from attack and mortality bear, *cæteris paribus*, an inverse ratio to sanitation. In the presence of such adverse statistics it is difficult to agree with these accomplished scientists.

I have always regarded cholérine, cholera infantum, choleraic or summer diarrhœa, English cholera, and Asiatic or epidemic cholera, as one and the same, similar in nature, and differing only in degree: and I am supported in this opinion by many of the highest authorities. Indian and European.^b Sir J. Fayrer, for instance, declares—"The fact is, that cholera presents many phases and symptoms,

* Report on the Cholera Epidemic in the year 1887, by Professor Pisani, M.D., Malta, Chief Government Medical Officer. December, 1888.

^b Vide my pamphlet on the Nature and Treatment of Sporadic and Epidemic Cholera. London: W. Renshaw, Strand. 1885.

varying in gravity from simple malaise to profound collapse. Sporadic cholera is often spoken of as though it were a different disease to the Asiatic cholera. For my own part, I believe cholera is cholera, wherever it occurs, and its epidemic prevalence and intensity are phases or accidents in its history." ^a

But, whatever the remote cause of cholera, whether bacillary, telluric, meteorological, or atmospheric, when in its actual presence I have at once recognised its neurotic nature, and have treated it accordingly. Dr. Henry MacCormac, whose pupil and assistant I was in the epidemic of 1834 in the Cholera Hospital, Belfast, taught that cholera was due to a lesion of the sympathetic system—indeed, the agency of the nervous system is apparent in every prominent symptom; the vomiting and purging evidently depend upon derangement of the nervous supply to the stomach and intestines; the aphonia, the vertigo, the spasms and cramps, the tremors, betray their nervous origin; while the symptoms of collapse and the algide condition, according to the teaching and experiments of Claude Bernard, are dependent upon great irritation and hypertrophy of the sympathetic nervous system; and to the vasomotor nerves may be attributed that depression of the functions of respiration and circulation, the most dangerous symptoms of the disease. Dr. Johnston, with others, holds the opinion that the specific poison acts primarily on the blood or the intestinal canal, then upon certain portions of the nervous system, especially the sympathetic and nerve centres. ^b

Assuming then that it is really the sympathetic system that is at fault in cholera, it follows that in seeking for a remedy we should select one capable of controlling and influencing it. Thanks to modern physiological research and clinical observation, that antagonistic and controlling agent has been found in a cerebro-spinal nerve—the pneumogastric or vagus in the neck. It shall be my duty to demonstrate that, when properly stimulated, this nerve immediately develops its inhibitory powers, equally in choleric or summer diarrhoea as in the most advanced stage of collapse in epidemic cholera. It is only necessary in either case to apply some of the liquor epispasticus of the British Pharmacopœia with a camel's hair pencil over the sheath of the pneumogastric in the neck, extending from the mastoid process behind the ear to the

^a On the Origin, Habits, and Diffusion of Cholera. By Sir J. Fayrer, K.C.S.I., M.D., F.R.S. Page 6.

^b Roberts's Theory and Practice of Medicine. Page 196. Fifth Edition.

angle of the lower jaw. The effect is instantaneous; the purging, the vomiting, and cramps cease; the patient generally falls asleep, and awakes cured, long before vesication takes full effect. The vagus is an inhibitory nerve. Stimulation of the portion of the sympathetic going to the heart is followed by increased forcible contractions; but stimulation of the vagus going to the heart may cause its stoppage in complete diastole.

There is another important indication subserved by counter-irritation over the vagus—viz., the restoration of the cardio-inhibitory functions of the nerve, which are evidently in abeyance in cases of cholera. Through its influence the violent contractions and palpitations of the heart are subdued, the dilating power of its walls and cavities, especially of the left side, is restored, and the stasis and congestion of the pulmonary and arterial system are put an end to. Both Parkes and Simon testify that the left side of the heart in cholera is generally found empty after death, while the right side is distended and full of blood; and Drs. Sicluna and Bruce state that, in every *post mortem* made by them in the cholera epidemic of 1887, in Malta, the left cavities were always empty, and the right ones containing blood in varying quantity.

In 1885, the date of my pamphlet, cholera was very prevalent on the Continent; but, happily, did not gain a footing on our shores. Two years later, however, it made an incursion on Malta, a British dependency. I then took advantage of its presence to have my theory and remedy thoroughly tested by competent and independent authority, and for this purpose, at the instance of my friend, Sir Patrick Keenan, Lord Knutsford (then Sir Henry Holland, Secretary of State for the Colonies) forwarded a copy of my *brochure* on "The Nature and Treatment of Sporadic and Epidemic Cholera," to Sir Lintorn Simmons, Lieutenant-Governor of Malta, with the request that he would invite the attention of the medical faculty of the island to the work. This was done. The medical men loyally responded to the call, with what result the following reports will show. Before reproducing their statements, however, I prefer to present equally independent testimony to the value of the vagus treatment in English cholera, in all its phases, from an English practitioner of standing and position, personally unknown to me, who communicated to the profession, through the medium of the *Lancet*, his experience of this topical remedy. I refer to Dr. Harry Poole Berry, M.B., of Grantham,

who, in a letter headed "Stimulation of the Vagus," writes as follows:—

"SIR,—In an annotation of your issue of October 3rd, headed as above, it is stated that the success attending the treatment recommended by Dr. Harkin is 'almost too good to be true.'* This may be so. Fortunately I have had no opportunity of trying the remedy in Asiatic cholera; but, as to its being remarkably effective in English cholera, or summer diarrhoea, and vomiting, which we so frequently meet with, I feel convinced after repeated trials. The letter referred to (Dr. Harkin's), appearing in the *Lancet* of August 16, 1884, was pointed out to me by Mr. Thurston, of Ashford, last summer, and since then I have tried the external application in the manner described—viz., blistering behind the angle of the jaw—in at least twenty cases, which were more or less

*STIMULATION OF THE VAGUS IN THE TREATMENT OF CHOLERA.

[From the *Lancet* of October 3, 1885.]

Although we may now reasonably hope that this country will be spared a visitation of cholera this year, it is not well to relax our efforts either of precaution or of treatment, so as to be fully prepared to deal with the disease should it come. So much success has apparently attended the mode of treatment recommended by Dr. Alexander Harkin that no apology is needed for reminding our readers of it. The paper in which he discusses the subject at length will be found in the *Dublin Journal of Medical Science* for last June, and it has been republished (Renshaw & Mullan, Belfast) both in this country and in France. (See also the *Lancet* of August 16th, 1884.) The treatment is in itself remarkably simple—viz., the application of blistering fluid behind the right ear, with the idea of stimulating the vagus nerve, so as to inhibit the action of the sympathetic on the abdomen. For, from a consideration of the phenomena of cholera, Dr. Harkin arrives at the conclusion, which was foreshadowed half a century ago by Dr. Henry MacCormac, that in the inordinate action of the sympathetic we have an explanation of the violent purging, cramps, and other characteristic symptoms; and he argues from known physiological effects of the relations between the vagus and the sympathetic to the trial of the remedial measure above stated. Certainly the cases cited by him are striking instances of the rapidity and efficiency of his plan in severe choleraic diarrhoea, and it is incumbent upon those who have to deal with the graver malady to prove the value of Dr. Harkin's recommendations. If by so simple a means he has really discovered a remedy which will diminish the high rate of mortality in cholera, he will have rendered a great service to medicine and to humanity at large. But we have so often witnessed the introduction of new measures, and have seen them followed by such disappointing results, that we dare not be sanguine as to the issue of this latest addition to the list. Formerly, in the diarrhoeal stage, Dr. Harkin says he employed the routine plan of absolute rest, warmth, counter-irritation to the abdomen, liquid diet, and the administration of sulphuric acid and opium. Now, when at liberty to do so, he discards all internal remedies, and merely applies "some epispastic fluid with a camel's hair pencil, commencing behind the ear, and extending in the course of the pneumogastric nerves as far as the angle of the lower jaw. The result is that the purging at once ceases, the patient often falls asleep and awakes cured, long before the vesication takes full effect." So also in the second and algid stages the same good result is experienced. It is almost too good to be true.

severe, and occurring in patients varying from infancy to old age. In all the cases it has been attended with marked and immediate success, the vomiting and diarrhoea being controlled almost at once, and in some of these cases I had previously tried acid and opium, catechu, chalk, logwood, &c., in usual doses. Whether it stays the purging as well as the vomiting I am unable to say, for my cases have been mostly too severe to justify me in making the experiment; so it may be that by checking the vomiting the diarrhoea yields to the remedy given by the mouth. It is, at any rate, a method of treatment which is attended by no risk, and in no way interferes with any other treatment which the practitioner may see fit to carry out. As to the theory of the action of the blister on this particular spot, I offer no opinion; but, as to its effect in my own cases, I have no doubt whatever.

"I am, Sir,

"Yours obediently,

"HARRY POOLE BERRY, M.B.*

"Grantham, October 7, 1885.

"The Editor of the *Lancet*."

Professor Pisani, in the comprehensive Report previously referred to, states that epidemic cholera first appeared in Malta on 25th July, 1887; was officially notified on 3rd August following, clean bills of health being delivered on 11th November. It does not appear, however, from various causes, that there is any record of my plan of treatment being adopted till the 31st August. In Professor Pisani's Report, which is largely historical and topographical, when referring to treatment in page 4, he states that "In some cases the improvement was very rapid after a protracted sleep which followed the counter-irritation of the vagus nerve of one (the right) or of both sides." Again, in page 5, "Chiefly at Zabbar, Zeitun, and Manoel Hospitals, with a view of attaining the same object, strong counter-irritation was also applied to the pneumogastric on the right side or on both sides, on that portion of its course comprised between the mastoid process and the angle of the lower jaw. It acted sometimes like magic, the patient sleeping after its use and awaking well."

Through the courtesy of Drs. Inglott and Cannataci, I am enabled to present a transcript of some cases thus treated in the Zabbar and Zeitun Hospitals, of which they were respectively the attending physicians. Unfortunately there were no records preserved at the Manoel Hospital, which was merely improvised for the occasion.

* Dr. P. Berry writes to me, on November 18, 1889, confirming his previously expressed opinion after increased experience.

Dr. Inglott's Report.

Dr. Inglott, after some preliminary observations in reference to my treatise on cholera, continues:—"Dr. Harkin found the direct means of acting on the sympathetic nerves independently of the rest of the nervous system. This means consisted in the counter-irritation over the vagus, which I have successfully applied, not only in epidemic cholera, but also in whooping-cough. The treatment in my hands turned to be very beneficial, and my own experience during the late epidemic in Malta is quite in accord with Dr. Harkin's opinions. Often cases of very severe type were by me arrested by means of this treatment when other means had been employed in vain. The treatment has been used not only by me, but also by my friend, Dr. Cannataci, who was in charge of the Zeitun Hospital. We worked together on that occasion, hand in hand, helping each other, and communicating daily with one another our observations on the important subject. Dr. Harkin's vagus treatment acted in our hands in many cases like magic. I am glad to be able to state my conviction that we have saved several patients from death by such means. I remember well to have seen at the Zeitun Hospital a poor boy, eight years of age, in so advanced a state of algidism, that very little hope there was of saving his life. All internal remedies failed. I was quite astonished on seeing him dying in the morning quite a convalescent in the afternoon, after a strong vesication over the vagus. In conclusion, I have no hesitation to state that Dr. Harkin's treatment is a remedy both reliable and speedy in its action in all severe cases of cholera." The following clinical histories illustrate the beneficial action of such a treatment:—

Cases of Epidemic Cholera Treated with Dr. Harkin's Counter-irritation over the Vagus in the Cholera Zabbar Hospital, Malta.

CASE I.—William Quintal, seven years of age, was removed to the Zabbar Hospital on 31st August, 1887, at 10 p.m.

Actual Condition.—Eyes very hollow, lips violet, hands and forearms cold, neck and upper part of the chest of a bluish colour, intense diarrhoea and vomiting, voice feeble, cramps very severe, thirst intense, suppression of urine, pulse imperceptible, extreme weakness; the patient refuses to take internal medicine. Dr. Harkin's treatment is applied at once. After half an hour the patient slept for nearly three hours, and soon after took lemonade with ice and cognac.

3 a.m.—Counter-irritation was applied again on the left side of the neck.

1st Sept.—At 7 a.m. the patient took coffee and milk, and continued to improve. After two days he left the hospital, weak, but perfectly cured.

CASE II.—Carmela Briffa, forty-nine years of age, was admitted into the Zabbar Hospital on 4th September, 1887, at 7 a.m. During the night she had a slight diarrhoea, preceded by a chill and perspiration, which were neglected; soon after she had vomiting. At 6 30 a.m. I was called to assist her; at 7 she was removed to hospital.

Actual Condition.—Face livid and violet, cramps very violent in the upper and lower extremities; the pain produces contortions of the face; eyes sunken in the orbits, encircled by a dark blue line; aphonia, dejections resemble rice-water, expression of great anxiety, tongue dry, hands violet, whole body cold, suppression of urine.

Treatment.—7 a.m., injections of ether and stimulants by the mouth: 8 a.m., same state; 9 a.m., thirst intense, pulse very weak, cramps severe, vomiting and diarrhoea; 2 p.m., no change up to this hour. Counter-irritation on both sides of the neck; 3 p.m., slightly disposed to sleep; pulse active, no cramps, no vomiting, one stool; 5 p.m., slept one hour; soon after took some coffee with brandy; 11 p.m., improving.

5th Sept.—4 a.m., passed a very good night, declared convalescent, beef-tea, Marsala wine.

7th Sept.—At 10 a.m. she left the hospital perfectly recovered.

CASE III.—Antonio Abela, married, labourer, 27 years of age, was admitted into the hospital on 11th September, 1887. On the 10th he had been taken ill, nearly at midnight; after that he committed dietetical errors, eating a quantity of fish, commonly called lamperchi. At 8 a.m., 11th September, I was called to visit him.

Actual Condition.—Has universal cramps, expression of an intense suffering, voice extremely feeble, face violet and livid, eyes sunken in the orbit, vomiting very intense, no diarrhoea, whole body cold, pulse imperceptible, respiration very difficult, suppression of urine. I removed the patient at once to the hospital.

Treatment.—Injection of ether, stimulant mixtures.

9 a.m.—Vesication over the vagus on the left side of the neck.

11 a.m.—I found that the patient slept nearly one hour, cramps stopped, pulse active, vomiting suppressed, passed urine freely. The patient, in my presence, took some broth and two spoonfuls of Marsala wine. The patient continued to improve daily, and after a few days left the hospital, able to work.

CASES OF EPIDEMIC CHOLERA TREATED IN THEIR OWN HOUSES.

CASE I.—Guiseppe Galt, forty-two years of age, shopkeeper, residing at Vicolo, San Francesci, Zabbar. This patient assisted his wife with great anxiety. His wife refused to undergo the *vagus* treatment, and died from spasmodic cholera thirty hours after the attack. After four hours from the death of his wife the husband was seized with violent diarrhoea. I was called to visit him at his residence; he refused to be removed to hospital. The following are the symptoms which I observed:—Diarrhoea very intense (rice-water), vomiting, eyes very hollow, lips violet, body cold, voice feeble, pulse weak, respiration disturbed, sense of oppression, thirst intense, cramps very severe in the lower extremities, general debility, suppression of urine.

Treatment.—Injections of ether, vesication very strong over the *vagus* on both sides of the neck. After two hours I visited the patient again, and found that he had slept nearly one hour. Cramps stopped, pulse became active, diarrhoea suppressed, passed urine freely. I called again to visit the patient in the afternoon, and found him weak but recovered. The *vagus* treatment acted like magic!

CASE II.—Michele Buchagica, fifty-two years of age, was seized with violent vomiting and diarrhoea on the 12th September, 1887, at 11 p.m. I was called to attend him at his residence, Vicolo, Saint Zabbar.

Symptoms.—Eyes very hollow, hands and forearms cold, neck and upper part of the chest cold, thirst intense, diarrhoea (rice water), vomiting and sense of great oppression, voice very weak and pulse imperceptible, cramps confined exclusively to the lower extremities.

Treatment.—I advised the patient to undergo the *vagus* treatment without delay. I used at the very moment the epispastic fluid on both sides of the neck, and prescribed to the patient a stimulant mixture. After four hours I visited him again, and found him convalescent. Being very weak, I advised him to continue to take the stimulant mixture, and milk with good cognac.

After four days he was able to leave his bed.

(Signed) G. F. INGLOTT,

Dist. Medical Officer,
Malta.

Report of some Cases of Cholera Treated by the Vagus Method in Zeitun Hospital, Malta, in the Epidemic of 1887, by Dr. Cannataci, the Medical Attendant of the Hospital.

Dr. Cannataci commences his report by confessing that the *vagus* treatment failed completely in several cases, but in many cases acted like magic. He continues:—"The following are some

of the cases in which the vagus treatment proved to be of great benefit to the poor patients":—

CASE I.—Vincenzo Barbara, twenty-six years of age, of very good constitution, married, was admitted into the Zeitun Hospital on 18th September, 1887.

History.—Well-nourished man and good labourer; he committed for several days dietetic indiscretions. He states that he was in perfect health on 17th September, worked as usual, and slept well. At 4 o'clock, morning of 18th September, in only three hours he had 10 discharges; the diarrhœa was not attended or preceded by colic or other pains in the abdomen; cramps occurred soon after the attack and continued without intermission. At 9 a.m., 18th September, he was admitted into the hospital.

Actual Condition.—Face livid, violet; eyes hollow; pulse small and feeble; somnolent, but checked by cramps; thirst intense; diarrhœa profuse, like boiled rice; vomiting intense and frequent. The patient seems feeble to an extreme degree.

Treatment.—Injections with sulphuric ether, enteroclysm with tannic acid, quinine and carbolic acid, excitant mixture with liquor ammonia, cognac with ice.

11 a.m.—Blue colour is very marked; pulse scarcely sensile; painful cramps of the lower extremities very frequent; body cold; diarrhœa profuse; vomiting frequent; respiration disturbed; voice hoarse; no urine. Counter-irritation is applied on the left side of the neck.

3 p.m.—Respiration less frequent; cramps less frequent and less severe; diarrhœa continues. Counter-irritation applied again.

6 p.m.—The patient slept one hour; same symptoms, but less severe; same treatment.

Sept. 19, 6 a.m.—The patient slept four hours during the night; the body is cold, but not like ice; diarrhœa moderate; no urine; same treatment.

20th.—The patient passed a good night; good broth and two eggs; a dose of Marsala wine.

21st.—The patient is convalescent.

22nd.—Gradually improving. On 5th Oct. he left hospital cured.

CASE II.—On the same day was admitted into the Hospital Cornate Jarionolite, thirteen years of age, of scrofulous constitution, with the following symptoms:—Face, hands, and forearms bluish; body cold; eyes very hollow; diarrhœa (rice water), with vomiting; cramps severe, confined exclusively to the lower extremities; anæmia; pulse very weak; respiration disturbed.

Treatment.—Applied at once the vagus treatment on the left side of the neck; excitant mixture internally. After two hours the patient

slept well, and the symptoms were less severe. She continued to improve gradually, and on 28th September she left the hospital perfectly cured.

CASE III.—On 26th September I was called at 8 a.m. to visit A. L., thirty-two years of age, of a very weak constitution; she was seized at 1 a.m. with severe diarrhoea and vomiting; I removed her at 3 30 a.m. to the hospital with very severe symptoms of cholera; I applied at once Dr. Harkin's treatment on both sides of the neck, and after four hours I found the patient improving; she was discharged cured from the hospital on 2nd October.

CASE IV.—T. C., eight years of age, came with her mother to the hospital on 27th September with the following symptoms:—Face livid, violet; eyes hollow; pulse small and feeble; somnolence; thirst intense; cramps; profuse diarrhoea, like boiled rice; vomiting intense; all symptoms of a severe attack of cholera; I applied Dr. Harkin's *vagus* treatment at 7 in the morning, and soon after she slept well and began to improve. On 29th October she left the hospital cured.

CASE V.—On same day L. A., twenty-two years of age, was also admitted into the hospital in a very weak state, and with severe symptoms of cholera. Dr. Harkin's *vagus* treatment was applied at once, and the patient improved immediately.

From these cases and about thirty others of the same kind, I conclude that Dr. Harkin's *vagus* treatment is very beneficial in the case of Asiatic cholera.

D. CANNATACI,

District Medical Officer,

Malta.

Zeitun, 20th November, 1889.

In his printed Report Professor Pisani gives the clinical histories of three cases treated by Dr. Inglott on the ordinary system, two of whom died and one recovered, before the adoption of my plan; the fatal cases were apparently not more virulent than those saved by the topical remedy; the successful one was only successful after nine days of continuous medication, and not until tentative counter-irritation by liniment of iodine was applied behind the ears. I give this instructive case as reported by Dr. Pisani:—

M. B., twenty-three years of age, living in No. 8 Vicolo i Strada Baradey, Zabbar, came to hospital on 2nd September, 1887, at 11 p.m. A spinster, very poor. Has a good character and a good constitution,

but she is slightly scrofulous. She committed no excesses; for nearly five days she assisted continually her mother, who suffers from attacks of heart disease. Being poor, she had been eating only rice boiled in water and some bread. On 2nd September, at 5 p.m., she had a moderate diarrhœa. The dejections suddenly became frequent; at 10 30 assumed a serious form, and became like boiled rice; cramps began simultaneously with the vomiting; the voice became feeble and the body cold. The patient requested urgently to be removed to hospital. I was called at 10 40. I gave the patient temporary assistance, and she was removed to hospital at about 11 p.m.

Actual Condition.—Surface of the whole body icy cold; colour of the face so deep that it is almost black; the skin of the extremities is singularly wrinkled and livid; voice nearly lost; the countenance expresses great anxiety; eyes much sunken; the upper and lower extremities affected with cramps in a violent degree; cold perspiration; suppression of urine; vomiting thrown with great violence and to a great distance; pulse imperceptible; thirst intense; great prostration; respiration difficult.

Treatment.—Spiritual assistance; subcutaneous injection of sulphuric ether; hot bottles; frictions with spirits of camphor, soap, and ammonia liniment; enema of spirit of camphor and hot infusion of coffee; large sinapism on the spinal column; large poultice of semina cumini and chamomile, stimulant mixture of liquor ammon. acetat. and spirit of chamomile; Cognac in an effervescent mixture of bicarbonate of sodium and chloride of sodium.

Sept. 3, 1887, 12 30 a.m.—Features immovable; great prostration; eyes dull, sunken; face, including lips, livid and cold; arms and feet cold; tongue pale and cold; great thirst; complete aphonia; suppression of urine; expression of great anxiety; diarrhœa continues (rice water); no vomiting; same treatment. 6 a.m., same condition; same treatment.

2 p.m.—Dulness of intellect; face always cold; nose icy; expression of great suffering; arms icy cold; complete aphonia; no urine; hearing and sight greatly deranged. Patient suffers less from cramps since she has been rubbed and warmed by hot bottles; extremities warmer; same treatment.

4 30 p.m.—Same state; same treatment.

8 30 p.m.—Patient is very bad; respiration disturbed; return of diarrhœa very profuse; folds of the skin when raised between two fingers disappear very slowly, as in the case in corpses (constant symptom in all bad cases of cholera which ended fatally).

9 30 p.m.—Symptoms unchanged; 5 hypodermic injections of spirits of camphor, two at each arm and one at the left leg; enteroclysm of good Cognac, ether, and spirit of camphor, in decoction of chamomile; drops of ether and liquor ammoniæ acetatis in hot water; frictions of ether with hot vinegar; large poultice of cumin seeds, chamomile and mustard meal.

from the upper part of the chest to the lower part of the abdomen ; strong liniment of iodine on the spinal column.

12 a.m.—Patient is a little better, but symptoms not improved ; two injections of ether on the spinal column, one at the upper, the other at the lower part of the same ; enema of strong infusion of cumin seed with two drachms of spirit of chamomile.

Sept. 4th, 12 30 a.m.—Slightly disposed to sleep ; purging less frequent ; cramps less violent ; vomited once ; extremities cold ; chest and abdomen warmer ; respiration difficult ; intelligence heavy ; pulse perceptible, but very weak ; speaking fatigues her very much. I ordered perfect rest, medicines to be stopped, perfect silence.

3 a.m.—Slept one hour ; one stool, with slight efforts to vomit ; pulse little excited, enema and gum arabic mucilage, a dose of bismuth internally.

8 a.m.—Slept two hours, no vomiting, no stools, pulse feeble, surface warm, comatose, two spoonfuls of broth and a good teaspoonful of Marsala wine every two hours.

10 a.m.—One stool, urinates very little, infusion of chamomile and large poultice on the abdomen ; pulse weak, face very pale, no cramps, no vomiting, expression of great weakness, eyes brighter ; same treatment ; intelligence clear ; a little thirsty ; lemonade, with some Marsala (iced) every three hours.

12 30 p.m.—Vomited a greenish matter, one stool, one ounce of urine since 10 o'clock ; thirst less, tongue red at border and top, with a mucous coating ; great debility.

5 p.m.—Patient complains of sounds similar to ringing of bells in the ear, which prevent her from hearing well ; liniment of iodine behind the ears ; respiration normal ; pain at the extremity of the last rib on the right side ; friction of laudanum ; broth and Marsala wine.

Sept. 5th, 8 a.m.—Voice natural ; urine copious ; diarrhoea ceased. Very weak ; a few spoonfuls of beef-tea every two hours ; a mixture of tinct. quassiae and cinchona every four hours.

5 p.m.—Feels better ; same treatment.

Sept. 6th, 8 p.m.—Passed a good night, and slept very well for four hours. Relished coffee ; still weak ; same treatment.

Sept. 7th.—The menses, which had stopped at the beginning of the disease, returned during the night. Patient is very weak, and unable to move her arms. Beef-tea, Marsala wine, two eggs.

8th.—Appetite tolerably good ; voice natural ; face pale ; appearance of small abscesses. Syrup of hypophosphite of iron, a tablespoonful morning and evening.

9th.—Slept well ; no dejections ; urine very abundant ; skin warm ; face pale ; weak ; same treatment.

10th.—Improving ; same treatment.

11th.—Patient is out of bed and declared convalescent. Continues to improve gradually. On the 19th September she was discharged, cured, but being very poor was kept on the hospital diet-book.

This is one of the most severe cases I have seen followed by recovery.

This case of Madalena Briffa, aged twenty-three, is very remarkable for its virulence, and exhibits in a strong light the skill and devotion of her medical attendant, Dr. Inglott, and the extraordinary fertility of resources which were at his command, and which proved so salutary in the cure, and indispensable to her recovery. One cannot avoid, however, contrasting her case with that of Carmela Briffa, forty-nine years of age (case No. 2), admitted two days later into the Zabbar Hospital, and whose medical history may be comprised in a few words:—Admitted into hospital on 4th September, at 7 a.m. Hypodermic injections and stimulants failing to relieve at 2 p.m.; counter-irritation on both sides of neck; soon after slept. Next day, 5th September, 4 a.m., declared convalescent. 10 a.m., 7th September, she left the hospital perfectly recovered.

These clinical reports do not call for any lengthened comment; they tell their own tale. It is needless to dwell on the importance of rapidity of cure in a disease where every moment is precious, or call attention to the calmative effect of the remedy on the nervous system, evidenced by its sleep-inducing powers in the presence of intense suffering; to its efficacy in restoring the balance of the circulation and respiration; of at once aborting or jugulating the disease, and of preventing the possibility of lapsing into a typhoid condition or secondary fever, so fatal in prolonged cases of cholera. That the same topical remedy is equally efficacious in every phase of the disease, from choleric or summer diarrhoea up to Asiatic cholera, strengthens the presumption that they are pathologically, one and the same, and affords another illustration of the soundness of Dr. Peter Latham's apothegm, viz.:—"That the treatment of diseases, rightly considered, is a part of their pathology. What they need, and what they can bear, the kind and strength of the remedy, and the changes which follow its application, are among the surest tests of their nature and tendency."*

* Latham on Disease of the Heart. Author's Preface. Page xvi.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Rheumatic Diseases, so-called. By HUGH LANE, L.R.C.P., Ed., and CHARLES T. GRIFFITHS, L.R.C.P. Lond. London: J. & A. Churchill. 1890. Pp. 128.

THE authors, in the Preface to this book, say:—"Since rare opportunities have been placed in our way for personal clinical research in this particular branch of the study of medicine, we hope that the following will lend some aid to the successful furtherance of an inquiry at once so intricate, interesting, and important." We have searched the book in vain for evidence of their having taken advantage of those rare opportunities, and we rise from the perusal of the work firmly convinced that if the writers have had clinical records, they must have mislaid them, as the only attempt at a report is the rambling accounts given by the patients whose cases form the basis of the work. If this treatise can be looked upon as representing the views of the authors on this subject, we are forced to the conclusion that their examination of the three thousand patients who have passed through their hands has failed to teach them anything practical in reference to the subject, while it has tempted them to advance theories such as the following in reference to rheumatoid arthritis. They say—"Does it not seem within the bounds of reason to regard it as a disease built up by the hereditary taints of gout and phthisis?" and again, they are led "to look upon phthisis and rheumatoid arthritis as cause and effect."

The attempts at a physiological explanation of the phenomena of the rheumatic affections dealt with are further evidence of the absence of all scientific method on the part of the authors.

Interspersed through the work are plates, representing appearances observed in some of the cases. It may be the fault of the artist to have the figures unlike what we are accustomed to witness. The arm depicted in Plate V. is certainly an odd representation of that appendage, and, although rheumatic affections have, to

our knowledge, produced strange deformities, anything like those shown in some of the plates before us we can hardly conceive.

We venture to predict for this book a speedy relegation to the museum reserved for writings—so intricate that no one can make head or tail of them—so uninteresting that their perusal is painful—and so unimportant as a contribution to medical literature that no one but the reviewer will ever wade through them.

Hunterian Lectures on the Morbid Anatomy, Pathology, and Treatment of Hernia. By CHARLES B. LOCKWOOD, F.R.C.S. London: H. K. Lewis. 1889. Pp. 168.

MR. LOCKWOOD, in the three lectures before us, has discussed very fully the causation of hernia, illustrating his views by carefully noted cases. He describes accurately the method of suspension of the intestines, and shows how changes in the suspensory apparatus stand in causal relation to hernia.

The cases detailed in the second lecture are very instructive, and the woodcuts and plates interspersed in the text add materially to the clearness of this section, in which the author shows that the chief causes of acquired hernia are laxity of the abdominal wall, simple prolapse of the mesentery, or prolapse of the mesentery complicated by prolapse of other organs, such as the kidneys, colon, pylorus, &c. In the third lecture he shows that the length of the mesentery bears little or no relation to hernia, and that prolapse of the mesentery is a cause, not an effect, of hernia. He then discusses the pathology and mechanism of prolapse. The symptoms are afterwards noted, and an admirable woodcut shows the appearance of the abdomen when this condition is marked.

The radical cure of hernia is then referred to—first, as regards the selection of cases; second, the statistics of the operation are reviewed; and, third, the more important methods of the procedure are discussed.

Following this are chapters on the treatment of prolapse of the mesentery, by suturing with strong silk the mesentery and transverse meso-colon to the abdominal wall, above the umbilicus; and on umbilical, ventral, congenital, and infantile herniæ. The book concludes with an elaborate table of measurements of the length of the mesentery and position of its attachments, &c., in 100 subjects without hernia. This was used as a standard for the measurements made in the cases of hernia detailed in the book.

The lectures are practical and well worthy of perusal, and we believe they will do much to stimulate surgeons to a more careful study of the subject from a pathological point of view ; while they will tend to place the operation for the radical cure on a firmer footing.

A Plea in Favour of Early Laparotomy for Catarrhal and Ulcerative Appendicitis. By N. SENN, M.D., Chicago. 1889. Pp. 20.

In this short paper the author reports two cases of excision of the vermiform appendix for ulceration—one conducted by himself, the other by Dr. Høgle, of Minneapolis—both were successful. The object of this paper is to “call the attention of the profession to the necessity of treating the primary disease of the appendix by radical measures before incurable complications occur.”

The indications for operation are pain localised in the right iliac region, circumscribed tenderness corresponding to location of the appendix ; often the enlarged and indurated appendix can be felt through the abdominal wall.

He conducted the operation as follows:—The incision is made four inches in length over the colon, extending to within an inch of Poupart's ligament, going through all the tissues down to the peritoneum, without a director using forceps to check hæmorrhage. Then the peritoneum is opened between catch forceps, a compress of aseptic gauze is packed around the cæcum, to prevent prolapse of the small intestine. Raising the lower margin of the cæcum brings the appendix into view. Ligatures are now applied to the mesentery of the appendix, round the base of which a fine silk ligature is passed. Section is then made with scissors a quarter of an inch from the point of ligature, and the mesenteric attachment is severed. The stump is then disinfected, dusted with iodoform, and covered with peritoneum by stitching the serous surfaces of the cæcum from both sides over it by a number of Lembert sutures. Mr. Senn says:—It has been heretofore customary to drop the stump without making any provision against the possibility of perforation subsequently taking place at the point of ligation. He then gives details of wound-dressing and after-treatment, and winds up with the following conclusions:—

1. “All cases of catarrhal and ulcerative appendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognised.

2. "Excision of the appendix in cases of simple uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations.

3. "Excision of the appendix in cases of appendicitis, before perforation has occurred, is both a curative and a prophylactic measure.

4. "The most constant and reliable symptoms indicating the existence of appendicitis are recurring pains and circumscribed tenderness in the region of the appendix.

5. "All operations on the appendix should be done through a straight incision parallel to and directly over the cæcum.

6. "The stump after excision of the appendix should be carefully disinfected, iodoformised, and covered with peritoneum by suturing the serous surface of the cæcum on each side over it with a number of Lembert stitches.

7. "The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margin of the wound.

8. "Drainage in such cases is unnecessary, and should be dispensed with."

We have read with interest this brief account of what is practically a new operation. Mr. Senn is a pioneer in abdominal surgery, and his views on anything relating thereto are worthy of consideration; but we believe we are expressing the opinion which most surgeons will form on perusal of this *brochure* when we say that the symptoms he has detailed are not sufficiently definite to justify an operation so serious as laparotomy.

Every surgeon of experience can recall many cases of complete and permanent recovery from even severe attacks of appendicitis. There is nothing new in covering the stump of the appendix with peritoneum—we have adopted the same course successfully in cases of perforation. While lauding Mr. Senn for his efforts, and congratulating him on the result of his case, we question the propriety of immediately incising the peritoneum for a disease which usually yields to appropriate medicinal treatment.

Ambulance Leaflets. London: Crosby, Lockwood & Son. 1890.

WE have received copies of four ambulance leaflets, an instalment of a series to be published from time to time for the use of Ambulance lecturers and pupils, officers of Urban and Rural Sanitary Authorities, the Police, and all persons interested in, or responsible for, the Public Health.

The subjects of the four leaflets already published are: (1) Rules to be observed in the Management of Epidemic or Contagious Diseases, based on the now well-known "Suggestions by the Society of Medical Officers of Health;" (2) a diagnostic table of the principal Fevers, giving their respective modes of invasion, characteristic symptoms, and accompanying skin eruptions (if any); (3) an excellent description of the characters of good meat, for general distribution among all classes; and (4) a diagnostic table of the chief forms of insensibility.

These ambulance leaflets cannot fail to be of use, and their extreme cheapness will favour their wide distribution among the people. They are made up in packets of 100 each, costing one shilling and six-pence, or, by post, one shilling and nine-pence.

Strathpeffer Spa: its Climate and Waters. By FORTESCUE FOX, M.D. (Lond.); Fellow of the Medical Society of London. London: H. K. Lewis. 1889. Crown 8vo. Pp. 165.

SOME two-and-twenty years ago we had the good fortune to spend several weeks in the early autumn on the first slopes of the mighty Ben Wyvis, loftiest of the Ross-shire mountains. Upon that occasion we visited Strathpeffer Spa, distant some four miles inland from Dingwall, on Cromarty Firth, and we were much struck by the beauty of the valley of the Peffery, whence the spa takes its name of Strathpeffer. We have also a lively recollection of the unpleasant taste and potency of the sulphur waters at the spa. At the period in question visitors travelled by road from Dingwall up the sequestered vale to the springs; but now they are carried by railway to the very doors of their hotel.

Dr. Fortescue Fox has written a capital and very readable book, and the manner in which it has been brought out reflects the greatest credit on both printer and publisher. The volume is divided into a medical part, consisting of eight chapters, and a general part, consisting of six chapters. In the former Dr. Fox gives a historical sketch of the spa, from 1772, when Dr. Donald Munro, F.R.S., communicated to the Royal Society an interesting account of the "Castle Leod Water." The second chapter contains an excellent description of the climate of Strathpeffer, which is contributed by Mr. H. Courtenay Fox, M.R.C.S. Eng. Then follow chapters on the chemical and medicinal properties of the sulphur waters, baths and massage, and the new chalybeate spring.

In Chapter VII. will be found a series of fifteen illustrative cases treated at the spa, while Chapter VIII. describes the spa life and diet, the "season," and Strathpeffer as a winter-resort.

Part II. includes chapters on excursions from the spa, Ben Wyvis, the geology and botany of the district, its antiquities, and a great deal of miscellaneous information. The book ends with a good index, and is illustrated with an Ordnance Survey map, and three photographic drawings. In a word, it is a valuable contribution to the literature of the mineral waters of the United Kingdom.

Practical Guide to the Demonstration of Bacteria in Animal Tissues; for the use of Students and Practitioners. By Dr. H. KÜHNE. Wiesbaden. Translated, with the consent of the Author, and edited by V. D. HARRIS, M.D., Lond., F.R.C.P.; Demonstrator of Physiology at St. Bartholomew's Hospital, &c. London: Baillière, Tindall, and Cox. 1890. Pp. 53.

THIS little book is not, as one might expect from its title, a guide to the ordinary methods of staining bacteria; it does not contain any account of the methods of staining which are most generally employed, such as Gram's method, or Ehrlich's or Neelsen's mode of staining the bacillus of tubercle; but it consists of an account of several new methods, and modifications of old ones, approved by Dr. Kühne. Most of the modes of staining described here require a considerable number of reagents, and consist of a good many stages. We cannot, therefore, recommend this book to those who are commencing bacteriological work; but we think that those who are already familiar with the ordinary methods of staining will here find new and interesting methods of making bacteriological preparations.

The arrangement of the book is bad, and there is no index; so that it is by no means easy to discover what mode of staining Dr. Kühne would recommend for any given species of micro-organism.

Dr. Harris has apparently endeavoured to make his translation as literal as possible. The result is that many of the constructions are German rather than English, and the sense in some places is rather obscure.

Intestinal Surgery. By N. SENN, M.D., Ph.D. Chicago: W. T. Keener. 1889. Pp. 269.

IN these two hundred and sixty-nine pages are collected the contributions which Mr. Senn has made to surgical literature during the past few years. We have had an opportunity of referring to them in these pages as they appeared, and we are glad to welcome the volume before us, as it contains the results of careful clinical observation and experimental research.

The volume before us contains, in the first part, an exhaustive account of the surgical resources in the treatment of intestinal obstruction. The author has collected the views of most of the notable writers on this subject, and his *resumé* is very readable, and decidedly instructive. The details of the operative measures necessary are clearly and definitely given, rendering this part of the work a very valuable contribution to the literature of abdominal section.

In the second part of the work Mr. Senn gives the results of his researches, experimental and otherwise, in reference to operations on the intestines. The use of gaseous distension in the diagnosis of obstruction and perforation is dealt with at great length, and this section will well repay perusal.

This collection of papers contains all that is worth knowing of the subjects treated, and should be in the hands of every surgeon interested in the advance of abdominal surgery.

A NEW CARDIAC TONIC.

Drs. SPILLMAN and HANSHALTER, of Nancy (*Revue de Thérapeutique*, December 1st, 1889), after trying coronille, conclude that—1st. Coronille is a valuable cardiac tonic. 2nd. Its good effects are quickly produced. 3rd. It increases the power and volume of the pulse; acts as a diuretic; lessens œdema; and gets rid of dyspnœa. 4th. In cardiac degeneration coronille is unsuitable. 5th. It is suitable for the same class of cases that derive benefit from digitalis. 6th. In some cases vomiting and diarrhœa are produced by the medicinal use of coronille. [The plant belongs to the Natural Order *Leguminosæ*, sp. *Coronilla Scorpioides*. In October, 1884, Mm. Schlagdenhauffen and Reeb (*Jour. Ph., Alsace-Lorraine*) isolated from the seeds of the plant a crystallisable alkaloid, which they believed to be the active principle.—ED.]

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.*

By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

I.—INSANITY IN GENERAL.

Lunacy in Australia.—Dr. F. N. Manning discusses some interesting topics relating to insanity in the Australian colonies, in the *Australasian Medical Gazette*, Jan., 1889. In the provision of reception houses in New South Wales and Queensland, and of lunacy wards in public hospitals in Victoria for the treatment of insanity in its early stages, the Australian legislative enactments are in advance of those in these countries. There has as yet been little legislative provision for imbeciles and idiots in Australia, and the majority of the cases find a place of refuge in the ordinary insane asylums, but New South Wales has a separate hospital for idiots. Three of the colonies have institutions for insane criminals. As regards the criminal insane, Dr. Manning thinks that those who commit crimes while insane should be treated in asylums; but that there should be lunacy wards in prisons, just as there are sick wards, for those who become insane while undergoing penal servitude, and he refers to the successful working of lunacy wards in connection with the Scotch prison at Perth and the English prison at Woking. It is interesting to learn from Dr. Manning that the Universities of Sydney and Adelaide make the study of psychological medicine a compulsory part of the curriculum for degrees. The author considers that no one form of building can meet all the requirements of the insane, and his ideal psychopathic hospital would consist of a central building for the sick and acute cases, surrounded by blocks or pavilions of varying form

* The author of this Report, desirous that no contributions to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal they will be forwarded.

and construction, for different classes, and supplemented by cottages for the convalescent, the quiet, and for certain chronic cases. At least a fourth of the total accommodation should be in the form of separate or single rooms. The pavilion should be comparatively small, so as to prevent too large an aggregation of patients.

Hypochondria in Females.—Dr. E. Mendel (*Deutsch. med. Wahnschr.*) defines hypochondria as a functional brain disease, the visible symptoms of which are fear, and pain, and apprehension, in regard to the condition of one's health. He distinguishes three kinds. First, simple hypochondria, in which the patients fear very severe illness or death, have only indefinite sensations, and see in very slight variations of health the beginning of fatal disease. Second, hypochondria, with hallucination of bodily feeling, in which the patients have the sensations in very definite organs. These symptoms are, according to Mendel's view, to be considered as irritations of definite parts of the brain cortex. Third, in the severest form come together with the above morbid phenomena disturbances in the higher sense organs; the patient sees things otherwise than the reality, as, for example, in a looking-glass, and hears tones and peculiar sounds, such as voices, inside of his head, &c. Hypochondria is in females of all ages a common disease, the slighter form is rarer than in men, the severer forms are more common. The patients' complaints are specially frequent in relation to their sexual organs, as, for example, fear of cancer, and in relation to the head. The females surrender to the disease earlier than the men; while men, in spite of their hypochondria, are able to go about their business, the women give themselves up to their feelings, and go to bed for good. Suicide is not common. Sometimes with hypochondria there is a tendency to masturbation, which disappears with it, and very often symptoms of hysteria accompany it. Out of 116 female hypochondriacs, 2 began at the age between 7 and 10 years, 4 between the age of 10 and 20, 40 between the age of 20 and 30, 42 between the ages of 30 and 40, 15 between 40 and 50, 8 between 50 and 60, and 5 between 60 and 70; 87 were married, 81 unmarried, and 8 were widows. A hereditary predisposition to nervous diseases was present in 75 per cent. Mendel found as causes very frequently mental shocks. Sometimes betrothal was a cause. The hypochondria very often developed in the puerperal period, and gynæcological operations had produced it in part through the mental effect, and in part from the loss of blood. The outbreak of

the trouble is sometimes sudden. The course is lasting, slow, with frequent relapses. A cure may occur after weeks, months, and years. The disease may also pass into other mental disorders, like hypochondriacal melancholia or paranoia, or end by death. A diagnosis has to be made in women between hypochondria and hysteria. The latter occurs mostly in youth, the former in later years. In one are stigmata and hysterical attacks, in the other not. In hysteria the pain and hopelessness play a much less important part, and the condition is a more variable one. As regards the treatment of female hypochondriacs, Mendel states that married life can scarcely be looked to for a favourable influence; that gynæcological treatment is to be employed under pressing circumstances only; that the food should be mostly or altogether vegetable; that change of scene and mountain travel are favourable; and that treatment in an institution, if there is no special reason for it, is not to be recommended.

Insanity following Surgical Operations.—Mr. Lawson Tait, writing to the *Brit. Med. Journ.* (Aug. 31, 1889), in criticism of the statements made by Dr. E. Denis, in his book upon this subject, says—"I have now performed, so far as I can estimate, between 7,000 and 8,000 operations, requiring the use of anæsthetics, and I have had anæsthetics administered in my practice for purposes not involving traumatism in probably 3,000 more instances, and I know of seven cases of sequent—not necessarily consequent—insanity. Of course, there may have been others not known to me, and I shall say fourteen cases, to cover that margin of error. My own practice, therefore, does not yield a proportion of cases of insanity following operations larger than the general proportion of insanity in the female adult population; and, if I include the cases of anæsthesia, it is probably considerably smaller. Dr. Denis says, 'En moyenne on observe 2·5 cas d'alienation mentale sur 100 opérations.' But, if this had been the case, all of us engaged in active operating practice would have felt the influence of the fact long ago. Personally, I have been struck by the occurrence of insanity after operations as being like the occurrence of tetanus, something to be met with occasionally, but not a matter to calculate on. If I saw an insanity rate of 2·5 in my operations it would be more striking than any death-rate in everything but my hysterectomies, and in that class I have never seen insanity follow in a single instance; and Dr. Bantock's experience amounts to practically the same result, for his exception cannot really be

called one of insanity following an operation. As a per contra, I can point to thirteen cases where operations have cured insanity."

Medico-Legal Problems of Inebriety.—In a paper on this subject, published in the *Alienist and Neurologist*, Dr. T. D. Crothers, in discussing specially the case of John H. Swift, convicted and executed for the murder of his wife, thus summarises his view as to the responsibility of inebriate criminals:—

1st. In all cases of inebriate criminals there is literally mental defect, and more or less incapacity to reason sanely or control their acts. An inebriate who does criminal acts cannot be of sound mind. No criminal who is an inebriate is sane, and no inebriate is fully sane, and no criminal can be of sound mind long.

2nd. The question for the medical witness to decide is, how far was the prisoner conscious of the nature of his acts, and how far did he have control over his acts in a certain condition when crime was committed.

3rd. In a case where crime was committed under the influence of alcohol the law asks what was the prisoner's mental condition at this time, and insists on fixing the boundaries of responsibility and accountability. The law demands that science should go into the penumbra region of sanity and insanity, and point out where vice and disease join, and where human justice should punish and where it should excuse as irresponsible.

4th. The scientific man demands that this question of mental condition at the time of the crime should be studied independent of all theories or legal rulings, seeking the facts and their meaning with no hesitation as to the effects of such conclusions on the court or public. The scientific man refuses to draw boundary lines of disease and accountability, but insists on minute study and general conclusions based on probable facts.

5th. If the facts in the history of a prisoner and the crime indicate a degree of unconsciousness of the act or its consequences, also an inability of control of his actions and conduct, the irresponsibility of the prisoner should be assumed as a fact far more likely to be true than his sanity and responsibility.

6th. When the fact of the inebriety of the prisoner is clearly established, his sanity and responsibility in a given case must be proven beyond all question or possible doubt—proven from the circumstances and conditions of the life and crime. The fact of the presence of inebriety reverses the order—his insanity must be assumed, his sanity proven.

7th. Finally, in all these cases the medical witness is called to determine the physiological, pathological, and psychological facts and their meaning. The application of these facts must be made by the court, jury, and law.

The medical expert and student of to-day must go beyond the theories of yesterday, or the facts on which yesterday's views were based. A newer, larger field opens up to-day, and the facts are more numerous, and indicate a clearer, wider view to-morrow.

II.—NEURO-ANATOMY AND PHYSIOLOGY.

A Simple Method of Hardening and Preserving the Brain for Purposes of Demonstration.—Dr. Rosenbach, of Breslau (*Centralblatt f. Nervenheilk.*, March, 15, 1889), advises that the brain be placed, in as fresh a condition as possible, in an eight to ten per cent. solution of carbolic acid in water, with a little alcohol (proportion not stated). A few incisions should be made into the arachnoid, and the brain supported on cotton, which should also be placed between the hemispheres under the cerebellum in the fossa Sylvii, &c., to facilitate the access of fluid. After a day or two the membranes can be easily removed—preferably by means of two pairs of forceps, to avoid the effects of the acid on the skin. After from three to five days the brain is fully hardened, and can be preserved indefinitely in a three to five per cent. alcoholic solution of carbolic acid. Brains prepared in this way are of a very tough consistency. They are more suitable for demonstrating the form of the various parts than for the differentiation of the grey and white matter (*Am. Journ. of Insanity*).

In the *Journal of Nervous and Mental Disease*, Dr. Blackburn describes a method he has adopted for permanently preserving the brain and other organs, the material used being "Japan wax," which is soluble in chloroform, benzole, and xylol. The brain is carefully hardened in Müller or Ehrlich's solution, which preserves its size and shape as perfectly as possible. After hardening for about five weeks in Müller's, or a shorter time in Ehrlich's fluid, the specimen is removed, washed, placed in a dilute alcohol, and gradually advanced through alcohols of increasing strength until absolute alcohol is used. When thoroughly dehydrated by the absolute alcohol it is placed in a saturated solution of Japan wax in chloroform, and allowed to remain until the alcohol is displaced by the chloroformic solution. The brain is then transferred to a bath of melted wax, and kept in it at the boiling point until

thoroughly infiltrated. When the infiltration is complete the specimen is removed, the wax drains from the surface, leaving it smooth, and when cool it may be varnished and then painted or lettered if desirable.

If the wax cannot be kept melted continuously, it is better to lift out the specimen and replace it in the chloroformic bath, as the wax has a tendency to crack when cooled in large masses. The cracking may, to some extent, be prevented by mixing paraffin with the wax. As to the time required for the different steps of the process, much will depend upon the size and character of the specimen, but after thorough dehydration a hemisphere should be allowed to remain three days in each bath. Dr. Blackburn says that specimens thus prepared are more durable than wax models.

Physiology of the Motor Region of the Cerebral Cortex—Bechterew (*Russich. Archiv. f. Psych* IX. 2 and 3; X. 1 and 2).—In this contribution the author first discusses the question whether the localised movements observed on electrical stimulation are due to the irritation of the cortex itself, or to the extension of the current to the underlying grey matter. He decides in favour of the former alternative for the following reasons:—The irritation of the cortex by mechanical means, by the application of common salt, produces localised muscular movements or convulsions, according to its intensity, similar to those produced by electrical stimulation. If the connection of the cortex with the white matter is separated by a horizontal section, the cortex being left *in situ*, no movements follow the use of even pretty strong currents. The effects of electrical stimulation of the cortex and the white substance were different. Prolonged irritation of the former excited epileptic attacks, of the latter only tonic contractions, which ceased upon the removal of the stimulus. He also found when a few days, usually four, had elapsed after the removal of a portion of the motor cortex, electrical stimulation of the exposed white matter, even when refreshed by a new section, excited no movements. The same is true of the internal capsule and corpus striatum. The optic thalamus, on the other hand, was not affected by the secondary degeneration of the pyramidal tracts. Stimulation of this organ excited contractions which differed from these produced by irritation of the cortex, in being tonic in character and involving a number of groups of muscles at once. The optic thalami were also excitable in dogs at from seven to ten days of age, when the cortex was entirely unresponsive to stimulation.

In regard to the extent of the motor region in the cortex, he finds substantial agreement between the results obtained by the three methods of physiological experiment, the production of secondary degeneration and the study of the normal development of the pyramidal tracts; but considers the last-named method the most reliable. He finds that the fibres of the pyramidal tracts are spread uniformly through the motor region, without breaking up into secondary bundles, and that they terminate principally in the ridges of the convolutions, few or none being supplied to the grey matter at the bottom of the sulci. Within the region of distribution of the pyramidal fibres weak electrical currents excite localised muscular movements. Outside of these limits excitable points may be found; but it is necessary to employ much stronger currents. He comes to the conclusion that in the dog and cat all the motor centres of the cortex are connected with both sides of the body. He divides them with reference to their connections into three classes—(1.) Centres which are mainly connected with muscles of the homologous side, including in the dog the platysma and, probably, the muscles involved in lateral movements of the trunk. (2.) Centres which are almost equally connected with both sides, including the muscles of the under jaw and those of the tongue, with the exception of the genio-glossus. (3.) Centres connected principally with the opposite side, including nearly all the remainder.

With reference to the effect of extirpations, he divides the motor disturbances into—(1) impairment of movement of locomotion, and (2) impairment of movements in which the extremity is used as an implement for a special purpose. Movements of the latter class were most expected, and after the extirpation of the entire motor region of one hemisphere were at first completely abolished. Later they were recovered to a certain extent, but never completely. When the extirpation was bilateral they were permanently abolished. Locomotor movements, on the other hand, were impaired to a less degree, and for a shorter time. The improvement which takes place after extirpation he considers due partly to subsidence of inflammation following the operation, partly to vicarious activity of the deeper reflex centres, and partly to the influence of the healthy hemisphere.—(*Amer. Journ. of Insanity*).

The Influence of the Nervous System on the Renal Function.—In the *Alienist and Neurologist* for October, Dr. J. Workman, of Toronto, translates Dr. Francesco Spallitta's lengthened paper on

this subject, published in "*Il Pisani*." Dr. Spallitta's experiments were made with a view of ascertaining whether the effects produced on the renal secretion by lesions of the medulla oblongata are due, as held by Ustimowitsch, Heidenhain, and B. Sachs, to the alteration of the blood pressure, caused by the lesion, or, as supposed by Eckhard, to some morbid change in the innervation of the kidney. The plan adopted was to cut through the spinal cord at various levels, and to watch the effect upon the secretion of urine. In order to be certain that the urine found in the bladder at the necropsy was secreted after the spinal cord had been cut, a solution of iodide of potassium was injected under the skin after the operation, and the urine tested for iodine, with following results:—

1. Lesions of the cord at the base of the first dorsal vertebra produced no changes in the renal secretion.
2. Sections at the seventh cervical and first dorsal vertebra permit the continuance of the secretion.
3. Sections at the sixth, fifth, or fourth cervical vertebra allow the secretion to continue, but cause the urine to contain a certain amount of albumen.
4. Sections at the third or fourth cervical vertebra arrest the secretion altogether.
5. Electrical stimuli applied to the cord in the cervical region arrest the secretion entirely.

The theory which appears to Dr. Spallitta to accord best with these facts is that the effect on the renal secretion of lesions of the cord is due mainly to the destruction of special nervous fibrillæ existing in the cord, which govern the function of the secretion of urine.

The Olfactory Centre.—During the last session of the Medical Society of London, Dr. Hughlings Jackson gave an account of a case of epilepsy with a marked *olfactory aura*. The patient, a woman, aged fifty-three, began a year previously to have fits, the first symptoms being tremors of the hands and feet. She then saw a little black woman who was always engaged in cooking. She also complained of a horrible smell, a subjective sensation which she was unable to describe. She stood with her eyes fixed for a short time, and although she did not lose consciousness, she passed urine during the attacks. Paralysis of the right arm and leg supervened, and, also, double optic neuritis. There, however, was no defect of sight, neither loss of smell, only a disordered subjective sensation. She gradually passed into a condition of dementia. At the *post-mortem* examination, a sarcomatous tumour was found,

occupying the whole of the end of the temporo-sphenoidal lobe, enveloping the amygdalate nucleus. It did not affect the grey cortex of the hippocampal convolution. The dentate nucleus and the internal capsule were compressed by the growth. The case is of the greatest importance, as it affords very strong evidence of the position of the olfactory centre. It is the first authentic case of this form of epilepsy where proof has been produced of an actual lesion in the temporo-sphenoidal lobe. In the report no mention is made whether the patient was able to localise the olfactory aura in the nostril of the same side as that on which the lesion was situated. It has been shown that the olfactory centre fibres, unlike the other cerebral centre fibres, do not cross. The case further illustrates the value of experimental physiology, for Ferrier some years ago pointed out that the hippocampal lobule and neighbourhood is specially related to the sense of smell.—(Ed. *Montreal Med. Journ. in Alienist and Neurologist*).

The Identity of the Functions of the Two Hemispheres.—At the meeting of the *Société de Biologie*, Paris, on the 25th of May last, M. Dupuy reported a case tending to show the identity of the functions of the two hemispheres. A young person, who had the power of moving the two eyes in different directions at the same time. In this case she saw objects only with one eye, and when she tried to observe with the other at the same time she was seized with dizziness. There appear, therefore, to be two distinct perceptive centres, contrary to the opinion of Horsley. In the discussion following, Dr. Brown-Séquard supported M. Dupuy, and maintained his view that the two hemispheres are identical in function and can replace each other.

Hæmatoma Auris.—Brown-Séquard produces hæmorrhage into the auricle in guinea-pigs by section and by irritation of the rectiform body in the medulla oblongata of the same side. This appears to suggest that hæmatoma auris is sometimes a peripheral trophic lesion, and comparable to analogous peripheral lesions met with in morbid conditions of the central nervous system, as, for example, in Charcot's disease. On this hypothesis, the rectiform bodies might be regarded either as trophic centres for the auricles, or, at all events, intimately associated with such centres. On this view, such slight traumatism as habitually sleeping on, for example, the left ear (especially if the pillow were hard) would act as an exciting cause of hæmorrhage in the auricle of an individual predisposed to degenerative changes.—(*Brit. Med. Journ.*).

PART IV

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF SURGERY.

President—AUSTIN MELDON, President of the Royal College of Surgeons, Ireland.

Sectional Secretary—MR. W. THORNLEY STOKER.

Friday, December 6, 1889.

The PRESIDENT in the Chair.

Compound Luxations of the Ankle.

MR. CROLY read a paper on compound dislocations of the ankle joint, illustrated by three very interesting cases. The first, in a farmer whose right foot was caught in a mowing machine, causing compound dislocation of tibia and fibula forwards on the dorsum of the foot: the tendons on the front of the ankle were injured, the entire front of the joint being laid open. Mr. Croly was telegraphed for to amputate the limb, but decided, on consultation with his father, to endeavour to save the foot. The dislocation was reduced under an anæsthetic, the wound dressed antiseptically; free incisions were made subsequently to relieve tension, and the patient recovered with a very useful foot, and walked as well as ever at the end of a year.

The second case occurred in a coal porter, in May, 1888. The man was of very intemperate habits, and a very bad subject for any accident. The dislocation was caused by his foot having been caught between the shaft of a coal dray and the horse's shoulder (the horse having fallen as he was being led up a hill).

On the patient's admission into the City of Dublin Hospital, three inches of the lower extremity of the right tibia was observed protruding

through the soft parts; the lower end of the fibula was comminuted, and the foot forcibly everted. Ether having been administered, and the parts washed with an antiseptic lotion, the limb was flexed and reduction effected. A large drainage-tube was passed through the joint, and antiseptic dressings were applied. Jointable splints were applied to the limb in the flexed position. The limb became enormously swollen the day after the accident, and bullæ appeared. Numerous free incisions were made to relieve tension. Opiates and bromides were administered to quiet the nervous system. Six months subsequently the articulating end of the tibia, with about an inch of the shaft fractured obliquely, was removed, after which the wound healed. Several portions of the fibula were removed through an opening on the outer side of the joint, and the patient recovered with a very firm foot.

The third case was a man named Thomas Smyth, aged twenty-eight, who fell from a rick of straw and received a compound dislocation of the tibia and fibula *outwards*. On admission to the City of Dublin Hospital, on Sunday morning at 4 a.m., reduction was effected, the wound having been enlarged. The patient, who was a man of most abstemious habits, having never tasted whisky, made a very rapid recovery. In three months he walked up and down the ward before the class, and his foot is now as useful as the other, and not in the slightest degree lame. The above patients, with drawings of the dislocations at the time of their occurrence and photographs, were exhibited to the Society. The cases are of great practical interest, and bear out the teaching of Sir A. Cooper, "that amputation should not be performed in compound luxations of the ankle-joint."

MR. MYLES attributed Mr. Croly's success in the cases in question to his great experience, and the care which he bestowed upon them, rather than to the particular treatment adopted, and therefore he contended that those cases did not afford a sufficient basis upon which to advocate that treatment, and still less to dogmatise in distinguishing between cases which should be simply reduced, or resected, or which would demand amputation. As pointed out in Erichsen's text-book, a great deal must depend on the nature of the injury, the warmth of the limb, and the patient's condition. He had himself seen four cases of compound luxation of the ankle, and his experience differed from Mr. Croly's. One of those cases was that of a man whom he had himself treated with such success that he was now able to move about with freedom through the action of the medio-tarsal joint. The man was exhibited before the Section last year, and his power of movement demonstrated, springing not from his heel, but from the toes and the ball of the foot, and the transverse metatarsal arch. Another was that of a man in whom both the tibia and fibula protruded, the tendons on the extensor aspect of the leg were torn away, and the skin was tense as a drum, the tendons

lying in a horrible state about the foot. Despite Mr. Croly's views, any attempt to save such a limb would have been futile. There was no alternative to amputation, and the man was now quite well. He had had another case of a woman of intemperate habits, whose foot was perfectly warm, but she was in such a state that she died within ten days of the injury. He never saw the least necessity for removing the articulating ends of the bone.

MR. J. K. BARTON did not think that Mr. Croly dogmatized beyond laying down as a general rule, with which he concurred, that an attempt should be made to save the limb in cases of compound luxation of the ankle-joint. Those accidents, the most serious in surgery, were test cases of the power of antiseptic treatment, and therefore he desired to learn whether or not the antiseptic method had been carried out in detail and with the utmost care. He relied on free incision opening into the joint to give an opportunity for making the antiseptic washing of it complete.

MR. NEWELL mentioned a case which he was watching in the Meath Hospital, and the treatment of which was precisely similar to that advocated by Mr. Croly. There was fracture of the fibula and dislocation inwards of the tibia, added to which tetanus set in some days after the decision was arrived at not to amputate. The man was now well both of the injury to the ankle and of the tetanus.

MR. TOBIN asked whether Mr. Croly had found tenotomy of the tendo-Achillis necessary, such being his own experience more than once.

The PRESIDENT said they treated all such cases in Jervis-street Hospital antiseptically, and they would not dream of amputating in an ordinary case of compound luxation.

MR. CROLY replied.—He had given 44 recorded cases without death on the authority of Sir Astley Cooper, and those cases had been before the days of antiseptic surgery. Injuries to the ankle-joint were not favourable to primary amputation, and therefore students should be cautioned not to rush for an amputation knife in cases of compound dislocation of the ankle. In the cases which he had described he enlarged the wound to give room for drainage, and antiseptic surgery was carried out in its integrity. He considered that if the tibia and fibula got dirty, the case was one for resection, but—if not—it was one for reduction. Tenotomy of the tendo-Achillis was not necessary. It was a suggestion by Campbell de Morgan, and was injurious, as weakening the back of the leg by taking away needful support. He was glad the President had endorsed the opinion that conservative surgery of the foot ought to be kept in view in compound dislocations, leaving it to the surgeon's discretion to determine the cases in which he should amputate.

A Case of Battey's Operation.

MR. J. K. BARTON read a paper on a case of Battey's operation. Hysteria complicates surgical diseases in a way calculated to mislead the surgeon in either of two ways—1st. Reflex phenomena due to hysteria may render the case apparently more dangerous than it really is, and thus induce the surgeon to recommend a serious or dangerous operation, which is not really necessary; or, 2nd. The very opposite effect may follow. He may too hastily conclude that the whole of the symptoms are so exaggerated by hysteria that the case may safely be treated by valerian and cold water, and its serious surgical aspect ignored. The following case illustrates these difficulties, as well as the success of the operation, in restoring a girl from the condition of a hopeless invalid to a life of activity:—

CASE.—Mary Moran, a maid of all work, aged twenty-six, had suffered for a year from severe pain in abdomen, which was greatly swollen and tympanitic. Reflex vomiting was so severe as to require nutrient enemata for six weeks. The diagnosis was "inflammatory disease in left ovary;" and all remedies, after a protracted trial, having failed to give relief, Battey's operation was decided upon, the patient being made acquainted with its character. It was performed in February, 1889. Both ovaries and Fallopian tubes were ligatured and removed; both were hard, white, and about three times their normal size. The patient recovered from the operation without a bad symptom. In a month she was up, and in two she had left hospital and returned to earn her own living. When seen lately she presented a remarkable contrast to the condition in which she was for six weeks previous to the operation, being healthy, vigorous, and cheerful.

MR. O'CALLAGHAN said the operation described by Mr. Barton was not Battey's but Mr. Lawson Tait's. Battey had simply removed the ovaries, but Tait removed the ovaries and appendages. Hence he asked whether or not Mr. Barton had had any skilled gynaecologist's opinion on the case. It seemed to him to be a typical case where the general surgeon had trespassed on the domain of the gynaecologist. The case was one of retroflexion and prolapsed ovary. As to chronic inflammation, from the history of the case there was not a symptom of it. Had there been any there should have been considerable adhesions, with hysterical and almost maniacal symptoms. So far as he could judge, Mr. Barton's case had not been successful.

DR. FREDERIC KIDD did not gather from the paper that there had been any examination per vaginam. In his opinion any appreciable enlargement of the ovary could be discovered by a manual examination. All the pain seemed to be developed on the left side, and yet the right

ovary was more affected than the left. He asked how was it that there were none of the subjective symptoms on the right?

MR. MYLES said gynecologists regarded the abdominal cavity as their own exclusive fertile pasture, but in his opinion it was equally competent to the ordinary surgeon of moderate experience and skill to open the abdomen of a male or a female. When Mr. O'Callaghan, in his violent criticism, complained that the gynecological area had been unjustifiably intruded upon, he asked what that gentleman meant by a prolapsed ovary, and where was it prolapsed to, and what did it do when it got there? During his experience in the anatomical schools he never saw an ovary that did not lie low down as far as possible in the bottom of the pelvis. However, regarding the operation itself, were they to assume that every young woman who suffered from hysterical symptoms was to be deprived of the power of reproducing her species? To destroy the highest physiological functions of a woman was an operation that should not be lightly undertaken. He asked did Mr. Barton impress upon the girl, who was in the prime of life, and when her ovaries were most active, what the result must be? Often hysteria suddenly disappeared, and the text-writers recommended early and congenial marriage—treatment which had proved successful, though not quite as showy as abdominal section. He instanced a surgeon who for a terrible affection was compelled to occlude the uterine channel, and the pathetic lament of the woman induced him to offer to open it again; while he referred to tragedies where women, unconscious at the time of the operation of the severity of their mutilation, revenged themselves afterwards, when they realised it, upon the operating surgeon.

MR. THORNLEY STOKER said Mr. Barton had not impressed upon his mind that the case was one of such extreme gravity as would justify the operation, which would be warranted only if her condition was such that her life was either threatened or had become intolerable by suffering. Nor did he think that the result of the operation justified its performance; for she remained nearly as hysterically insane as she was before, although she passed into a condition of somewhat improved physical health.

DR. PATTESON regarded the diagnosis as inadequate to indicate operative procedure—the left ovary being the seat of all the symptoms, though the right proved to be more enlarged and more diseased. But there was no adhesion, or only such slight evidence of inflammation that the operation might have been postponed. The microscopical appearances did not point to chronic inflammation of the ovary, if there was any; because he had yet to learn that a few dilated vessels and scattered groups of leucocytes evidenced the pathological changes that would occur in chronic inflammation.

The PRESIDENT said that the woman being in great pain, and her life

in imminent danger from that pain, the operation was simply done to save her life; and under such circumstances, where the woman could not have lived, there were few hospital surgeons who would hesitate to remove both ovaries.

MR. BARTON replied.—He blamed himself to some extent for the adverse criticism, in not having made clear the fact that in the opinion of his colleagues and himself the girl was dying of long-continued disease—disease producing constant vomiting, extreme exhaustion, and intolerable suffering, so lowering that she must soon have passed into a condition practically incurable. The serious character of the operation he did not at all blink, nor did he suggest or think that it should be lightly undertaken. So far as could be done he had explained the nature of the operation to the patient, and she deliberately assented to it. Moreover, having regard to the doctrine of the survival of the fittest, her physical condition was such that it would be detrimental to the community if her breed were propagated. He disagreed with Mr. O'Callaghan's view that a general surgeon should not intrude into the obstetrical domain, or that there should be such an artificial barrier in surgical science that where disease developed in the rectum it was a case for the general surgeon, but at the other side of the septum of the vagina it was a case for the obstetrician. Indeed, he maintained that an experienced surgeon, skilled in manual operations, was more fitted to carry out such an operation successfully than a gentleman trained in gynaecological science without practical experience of operative surgery. But in this case he had had the benefit of Dr. Purefoy's opinion that there was no retroflexion of the uterus. Before he operated he had every reason to believe that there was inflammation, and the sequel showed that he was right, as Dr. Bewley's report demonstrated—even that there was chronic inflammatory action. He was gratified to say that the case was more successful than some of his critics seemed to think. From being reduced to the last stage of emaciation, suffering constant pain, and bedridden, as she was at the time of the operation, the girl was now, as the result of the operation, restored to health and strength, capable of performing the functions of a domestic servant, as she had been doing for months, without any hysterical nonsense about her, and with a fair prospect before her, though she would have to forego marriage happiness.

The Section adjourned.

Friday, January 17, 1890.

The PRESIDENT in the Chair.

The High Operation for Encysted Calculus.

MR. M'ARDLE read a paper on the high operation for encysted calculus. [It will be found at page 218.]

MR. J. K. BARTON said the position of the stone, as described encysted immediately behind the prostate, was indeed rare, and presented difficulties in diagnosis, as well as need for most careful consideration of the means of reaching it. He agreed in the conclusion arrived at by Mr. M'Ardle, that the suprapubic operation was the one most likely to lead to a favourable result. Some few months ago he had had to deal with a somewhat similar case himself—that of a patient, aged sixty-eight, from whom he had removed a calculus eight years previously by lithotrixy. The man enjoyed good health till about six months ago, when he complained of acute inflammation of the bladder. On examination three months later the bladder was in a fairly good state; but micturition was frequent, the bladder containing only three to four ounces of urine, and there was a copious discharge of muco-pus. His diagnosis was that he had to deal with a prostatic calculus impacted in the prostate, and also with a loose calculus in the bladder. It was impossible to reach the position of the prostatic calculus from above, and he decided against the suprapubic operation, whereas perineal section in the median line, without the risk of lateral lithotomy being involved, was feasible, as opening a way to introduce into the bladder a lithotrite. Thus about half the stone was removed, the fatigue of the lengthened exposure making the complete removal of the *débris* undesirable for the time being. The case went on favourably for three weeks, when the man succumbed from abscess in the kidney. The same purulent discharge continued after the operation as well as before it, in spite of repeated washing, so that the mucous membrane could not be said to furnish the pus.

MR. COX, having been consulted by Mr. M'Ardle upon the medical aspect of the case before operating, because of the presence of a large quantity of albumen in the urine, said his opinion was that this condition was the result not of disintegration of the kidneys or of disease, but of reflex irritation from a hard stone irritating the mucous membrane, and in like manner he accounted for every third or fourth beat of the heart being intermittent.

MR. KENDAL FRANKS.—According to the authorities in cases of large calculi the suprapubic operation should be preferred to the perineal as the simpler and more successful. As regards suture, where the bladder was diseased, and the urine decomposing with every prospect of septic

matter reaching the wound, he believed the consensus of opinion was that the suture should not be adopted; but in cases of healthy bladders, where the urine was healthy, the suture should be tried. There was no danger from suture in healthy bladders, while the period of recovery was shortened from 21 to 7 or 10 days.

MR. MYLES regretted that while Mr. M'Ardle had quoted the names of poetic Dutchmen whose surgery was clumsy and slovenly, he had not mentioned a single English writer, although suprapubic cystotomy owed its inception and development to an English and Irish surgeon respectively—namely, Sir Henry Thompson and Sir William MacCormac. An admirer of simplicity, he agreed that the suprapubic presented to the average surgeon, ignorant of anatomy, easier access to the bladder and safer exit than through the perinæum; but in the hands of a competent lithotomist he doubted that the result would be better than through the perinæum. It was desirable to distinguish—which had not been done—the cases suitable for the suprapubic and those for the perinæal operations. He had himself operated on a man suffering from obstinate perinæal fistula in addition to bladder irritation. The bladder was shrunk to the size of a walnut and empty through incontinence of urine. Every attempt to distend the bladder failed, and the incision had to be made on a contracted bladder. Several feet of the intestines came out without harm. The bladder was rotten and collapsed behind the pubis. However, the stone was successfully removed. That operation was the suprapubic; but he would not in a similar case do it again. Suprapubic section was useful to those ignorant of anatomy and was not to be compared with the operation through the perinæum by a skilful surgeon.

SURGEON MAJOR O'FARRELL having examined the patient operated on by Mr. M'Ardle, said it would be a most difficult process to have extracted the stone by a median perinæal section. He would be for using a blunt-pointed scissors instead of the hernia knife, as insuring a clean cut and certainty of where the cutting edge was engaged.

MR. TOBIN repudiated Mr. Myles' wholesale onslaught on continental surgery, and said it did not at all represent the opinion of the Academy. He had himself seen Billroth operate, and a more courteous surgeon or one who attended more carefully to details he never met.

MR. M'ARDLE, in reply, said his reason for adopting the suprapubic method was the difficulty which he experienced on two former occasions in removing an encysted calculus by the perinæum; and in the case under notice, to get at the calculus, he would have been obliged to cut through the prostate into the cellular tissue and through the posterior wall of the bladder behind the trigone. In his case, as in Mr. Barton's, a calculus was removed six months before the operation by lateral lithotomy, and later one by lithotripsy, the encysted one being overlooked. The apiculus of calculus stood out through the mucous membrane, and it would form

a nucleus for stone to gather round it. Mr. Franks had noticed that for large stones the suprapubic method was the most desirable. It was by that operation Schwartz had extracted a stone 18 oz. 2 dr., and it would be hard to understand how such a stone could be got out in three minutes through the perinæum, as suggested by Mr. Myles. Where there was a tendency to softening, continuous suture, adverted to by Mr. Franks, was dangerous as involving urinary infiltration, or, unless the drainage was complete, if the urine passed through the vesical wound, pelvic cellulitis would result. In reference to the time and difference between the effect of suture and non-suture, healing took place from 21 to 90 days, the average being 47 days without suture, whereas with suture the average time for healing was only eight days. As regards the case detailed by Mr. Myles, he thought it had been best to have left the rotten bladder alone. In reference to Surgeon-Major O'Farrell's remark as to blunt scissors, he approved of a curved scissors with a blunt and narrow blade, as useful in opening into the sac.

The Section adjourned.

SECTION OF MEDICINE.

President—**LOMBE ATTHILL, M.D.**; President of the King and Queen's College of Physicians.

Sectional Secretary—**A. N. MONTGOMERY, M.K.Q.C.P.**

Friday, January 24, 1890.

The PRESIDENT in the Chair.

Exhibition.

A patient suffering from pronounced gout was sent for exhibition by Dr. Duffey.

The Influenza Epidemic.

The **PRESIDENT**, pursuant to the resolution of the Council of the Section, put the question of the desirability of having a discussion on the epidemic of influenza at the next meeting in February, and declared it carried.

The Practice of Clinical Medicine in Europe, A.D. 1507.

Dr. J. F. KNOTT read a note on the practice of clinical medicine in Europe in the year 1507, derived from a book printed in that year in Venice, and now in the possession of Dr. Aquilla Smith, who had permitted its exhibition to the Section.

Angina Pectoris in the Heart-Palsy of Acute Infective Diseases.

DR. J. W. MOORE read a paper on the above subject. [It will be found in the Number of this Journal for February, 1890, page 122.]

DR. A. W. FOOT observed that the latter half of the communication was devoted to a point already ascertained—namely, that sudden death occurs even after recovery from the acute illness of diphtheria—*e.g.*, at a former meeting a patient had been exhibited in proof of recovery from severe diphtheria, and on the following day she died. Trousseau had recorded a case of death a year after recovery. Hence he assumed that the cases of recovery specified had not lived long enough yet to die. The other part of Dr. Moore's communication pointed to the development of angina pectoris in a new direction. It was contrary to experience to find the disease, save in rare cases, occur among females and children. Heberden had noted, as a rare instance, the disease in a boy aged twelve; and Sir John Forbes, out of 88 cases, did not find one in a child. Therefore he contended that the existence of the disease in a child of three years of age should be established on very certain clinical data.

The PRESIDENT having also spoken,

DR. J. W. MOORE, in reply, said it was idle to deny that angina pectoris occurred in females. He recalled the case of a lady whom Dr. Foot had seen with himself at death's door. The same lady, fifteen months afterwards, facing a breeze while going to a railway station, was seized with agonising pain in the left side of the chest, and she died in ten minutes. Angina pectoris was not an essentially isolated disease at all, but was the term applied to a group of symptoms which might be present in convalescence or in acute infective disease; and instead of accepting even the most classical account of it as complete, it was open to any observer to add to the recognised causes of "breast-pang."

A Remarkable Case of Intestinal Obstruction.

DR. WALLACE BEATTY read a paper on a remarkable case of intestinal obstruction. The patient, a boy aged ten, came under his care on January 16, 1889, having been ill for 4 days. The illness commenced suddenly with severe abdominal pain, chiefly referred to the region of the cæcum. In a few hours vomiting occurred, but lasted only one day; diarrhoea in moderate amount set in also. The symptoms during the first 4 days were not very urgent. When Dr. Beatty saw him there was abdominal pain of moderate severity; tenderness on pressure over right iliac fossa; some tension of abdominal walls. Temperature, 99° Fahr.; a rather weak pulse and a furred tongue. From the 4th day until the 19th the boy's condition was—Some diarrhoea; slight tension of abdominal walls; tenderness in right iliac fossa; moderate fever—the highest temperature reached being 101° Fahr.; no vomiting. On the

18th and 19th day an indistinct tumour was felt on deep pressure in the right iliac fossa. On the 19th day a change in the symptoms occurred, this change consisting in paroxysms of severe abdominal pain, vomiting, distension of the abdomen, and obstinate constipation. Obstruction of the bowels had set in; the obstruction lasted for 32 days, yielding suddenly on the 50th day from commencement of the illness. During these 32 days the symptoms were—(1) rapidly increasing distension of the abdomen, commencing in the umbilical region and subsequently involving the whole abdomen; (2) paroxysms of abdominal pain, becoming each day more and more agonising, and subdued only by repeated hypodermics of morphia; (3) frequent vomiting of bilious fluid—on only one or two occasions had the vomited matter a fæculent appearance; (4) obstruction of the bowels almost complete—on only a few occasions some wind and a scanty amount of fæces came away, without being followed by relief; (5) rapidly increasing emaciation, which became finally extreme; (6) a normal or subnormal temperature; (7) a pulse of fair volume during the greater part of the time, and of moderate frequency—i.e., under 100. At the termination of this period the pulse became more frequent. The boy was apparently dying—cold extremities, scarcely perceptible pulse, infrequent respirations (4 in the minute), when the obstruction suddenly gave way, and pints of fluid fæces were passed. He made an excellent recovery. In convalescence there was an attack of atrophic keratitis.

Dr. Wallace Beatty was assisted by Sir William Stokes in the conduct of the case. They considered the case to be one of typhlitis, producing paralysis of the bowel, and so leading to intestinal obstruction.

SIR WILLIAM STOKES, who had been consulted in the case, said the interest of it centred round two points—(1) the diagnosis and (2) the treatment. On more than one occasion operative surgical interference was seriously discussed, backed by recommendations both in this country and in England that the patient should get the chance of laparotomy. But he persistently opposed that course. He did not think it was a case of intussusception. He looked upon it as a case of typhlitis, and that the paralytic condition which brought about the obstruction was due to localised inflammation. The indications in support of his view were, first, the early febrile disturbance, and, secondly, the absence (notwithstanding Treves' dictum) of shock, collapse, diminution of temperature, and failure of the pulse, which in every case of intussusception were present. On the other hand, the early diarrhoea contraindicated typhlitis, except for the consideration that the patient was a boy who, like the majority of boys, was fond of sweetmeats, and had the opportunity of free indulgence. Hence, he concluded that the early stage was diarrhoea, and that typhlitis was the secondary stage or sequel. In that condition of things, and believing that it was not a case of purely mechanical obstruc-

tion, he knew that to open the boy's abdomen would militate against a successful result. Indeed, he did not think there was a single instance recorded in Dublin of a successful result obtained by laparotomy for the relief of acute intestinal obstruction in a child. However, this would not have deterred him from operating if he were sure he would have to deal with a mechanical obstruction.

DR. FOOT was of opinion that the case was one of general, diffuse, subacute peritonitis. The tenacity of life in children was proverbial; so that none should ever despair of a child's recovery. Puncturing the intestine was a most salutary process. He had himself, in an obstinate case in the Meath Hospital, punctured the tympanitic intestine of a boy, aged twelve, who, sleepless for days before, fell asleep immediately after, and whose first words when he awoke were—"Doctor, give me another prod."

DR. MACAN said the expression "gave an enema" was too indefinite, as not indicating the mode of giving it. An enema was effectual or ineffectual according to the way in which it was given. As regards Sir Wm. Stokes' reluctance to operate, he did not think it was a sufficient reason to say that the case was one of typhlitis; because typhlitis had been successfully treated by abdominal section many times.

DR. JOHN WILLIAM MOORE concurred with Dr. Beatty's explanation of the inflammation and ulceration of the cornea, reminding him of what he had himself observed in some cases in the later stages of small-pox.

The PRESIDENT said Dr. Beatty's case was an unusual one. He had had experience himself of a case of a fat elderly woman upon whom he operated successfully for an ovarian tumour. She had abnormal abdominal distension, with moderately high temperature and vomiting, and 21 days elapsed without a motion. The distension was so great the abdominal section opened to a considerable extent. She was kept alive by nutritive enemata. After the evacuation took place she recovered. Where the constipation was due to inflammatory causes, an operation should, if possible, be avoided.

MR. ORMSBY did not think that $3\frac{1}{2}$ grs. of morphin helped to increase the peristaltic action of the intestine.

DR. WALLACE BEATTY replied, and said he concurred with Sir Wm. Stokes in objecting to an operation. Once they had determined that the case was one of paralytic obstruction, the only operation would be an artificial anus, which in the boy's case would have meant death. He differed from Dr. Foot's view as to the case, having been one of local peritonitis, becoming general. The boy was not collapsed, and the distension commenced in the region of the umbilicus, and slowly extended to other parts of the abdomen. Only as much morphin was given as was absolutely necessary to relieve the pain.

The Section adjourned.

SECTION OF STATE MEDICINE.

President—A. W. FOOT, M.D., F.K.Q.C.P.

Sectional Secretary—E. MACDOWEL COSGRAVE, M.D., F.K.Q.C.P.

Friday, February 7, 1890.

The PRESIDENT in the Chair.

The Medical Selection of Lives for Assurance.

Instead of the usual introductory address, DR. A. W. FOOT, President of the Section, read a paper "On the Medical Selection of Lives for Assurance." [It will be found at page 198.]

PROFESSOR PURSER, speaking from many years' experience in examining for life assurance, agreed almost entirely with the views expressed by Dr. Foot. In the first place, he held that a medical officer examining for a company was always bound, in cases of doubt, to give the benefit of the doubt in favour of the company. The medical man should state, in the clearest language, what he believed to be the condition of the applicant's health, and it was for the company then to settle whether they would reject him altogether or take him with an addition, to be determined with the aid of an actuary. Examinations for life assurance must necessarily be very imperfect. It was difficult to know what value to put on family history. The causes of death assigned were so imperfect, and so frequently absolutely incorrect, as to be of very little value; and, therefore, except in very clear cases, he set no value at all upon family history. No doubt, if an applicant stated that all his relations had died of consumption it would be very much against him; but the ordinary causes of death assigned, even in the Registrar-General's returns, were worth very little, a very large number being certified at random. In his view a Registrar-General's returns of the causes of death were not worth the paper they were written on; a large number were correctly stated, but a large number also were incorrectly stated. Often it was difficult to say what a patient died of; and, again, *post-mortem* examinations disclosed that the causes were different from what the doctor thought. He did not think, therefore, that the Registrar-General's returns were sufficiently accurate to found scientific conclusions upon them. As regards renal disease, if he found an applicant had albuminuria he advised that the case should be postponed for three or six months, or a year; and if there was albumen in the urine when he came up again he was rejected, but if not he was accepted. No matter how long a person might live who had albuminuria, he did not think such an applicant safe to accept on any terms. For a considerable period of his experience in examining during the past twenty years it was left optional by th

company to examine the urine for albumen, and his practice, accordingly, had been to examine it only where he had reason to suspect there was something the matter with the kidneys; but for some years past he was obliged to examine for sugar and albumen in every case, and in a considerable proportion of the applicants, in whom there was no reason to suspect anything the matter with their kidneys, he found albumen, and, though apparently in perfect health, they were rejected. Another fatal barrier to a person being insured was intemperate habits, and hence, in the case of every applicant, the strictest inquiries were made as to what he drank, when he drank, and how much he drank. He did not think there was ever a case passed by him of a person who stated his habits to be temperate, and whose habits were intemperate; whereas, he knew persons who stated they were of intemperate habits, and he would not consider them so himself. He did not think that, as a general rule, applicants tried to deceive; but if a patient told a good lie, and stuck to it, it would be almost impossible to find him out. The questions on the forms, so far from being vexatious, were of the greatest assistance; and he thought there ought to be questions to elicit whether the applicant had had scarlatina, measles, small-pox, or other diseases which a person would have once in his life.

DR. M'SWINEY said that, though not an examiner for an insurance office, cases had come under his observation upon reference, as an independent physician, on the question of suitability for assurance. He asked what effect the opium habit ought to have in determining the question. Having regard to the advances in surgical science, he also asked whether hernia, which was now so successfully cured by the radical method, would involve rejection; and, also, as to the conclusion to be drawn from the presence of hæmorrhoids, which might be regarded as symptomatic of other disease. Organic valvular disease was another point upon which he desired a definite opinion.

DR. BEWLEY, as an examiner for an insurance company, said he met with a couple of cases of primary syphilis followed by eruptions. He submitted that an applicant so suffering ought not to be considered on a par with a man who never had syphilis.

DR. E. MACDOWEL COSGRAVE said insurance offices were now, as a rule, alive to the importance of the symptom of albumen in the urine—so that, at any rate in all cases of policies for over £500, the compulsory examination of the urine was the rule. The question of occasional intemperance involved a difficulty as to the advice to be given, especially in the case of a person aged between twenty and twenty-five, as many gave the habit up, but others went from bad to worse. Of course, there was no doubt as to the risk in connection with an habitual tippler. One company, with which he was himself connected, solved the difficulty in dealing with slight deviations from health in a peculiar and satisfactory

way. Instead of loading the premiums, a policy was issued at the ordinary rates, but the amount of the policy was payable on a sliding scale. Thus, where the amount was £1,000 and the expectation of life twenty-five years, if healthy, the policy was issued upon the terms that if the insured died in the first year the liability of the company would be only £800; but each year of life increased the policy, so that in twenty-five years the policy was for £1,000. Thus, there was no "loading" for lives which lived the full expectation. That plan seemed to work well, and lessened the difficulties of the examiner.

SIR WILLIAM STOKES said there were some practical difficulties in the way of carrying out some of Dr. Foot's suggestions—for instance, in the case of females, however theoretically desirable an examination of the rectum might be, it was impracticable. Nothing could be more pernicious and unfair than making the doctor's fee for examination proportionate to the amount of money insured; because the medical man who discharged his duty must necessarily have the same trouble in examining a person seeking to insure for only £100 as in the case of a person insuring for £10,000; and he thought the medical profession ought to make a stand on the point. His experience did not coincide with Professor Purser's in meeting persons who told the truth as regards their habits of life, especially persons of intemperate habits. He had known three cases of intemperate or free drinkers who had exercised self-denial for months, and then gone before a doctor, and denied that they were, or had been, of intemperate habits, and so passed as first-class lives; but immediately afterwards they reverted to their old habits, got ill, and died. Notwithstanding the advances in surgery, he would not recommend a person with hernia as a first-class life; he would be extremely apprehensive of the result of the operation for the radical cure. Even after a successful operation the hernia might come back again, perhaps in a form more difficult to deal with than before. Neither would he accept a person afflicted with hæmorrhoids as a first-class life. The operation dealt only with the existing condition of the parts the seat of the disease, and not with the conditions which brought about the disease. He would not recommend cases of albuminuria to be taken under any circumstances, the presence of albumen being sufficient indication of "something rotten in the state of Denmark" in connection with the kidneys.

DR. DONNELLY asked whether the use of tobacco militated against the applicant for life assurance?

MR. WILLIAM STOKER mentioned the case of a lady who had been, in 1847, ordered by the late Dr. O'Reilly to take morphin for nervousness. Her life was subsequently insured for a large sum. She took opium in larger doses than she was ordered; and, in 1852, the insurance company becoming aware that she took morphin, the question arose as to the truth-

fulness of her answers when proposing to be insured. It was found she told the truth so far as she knew. Some years afterwards she became unable to keep the policy on foot herself, and an eighty-per-cent. gentleman got hold of it. The company offered a sum considerably in excess of the surrender value; but, thinking the old lady likely to die soon, the usurer held on to the policy. In 1882 the lady came under his observation, and she was now taking 4 grs. of morphin hypodermically in the evening, and 2 grs. in the morning. He could not break her off the habit. She was now aged 78.

MR. F. A. NIXON did not think either hernia or hæmorrhoids *per se* should be regarded as a cause for rejection.

SIR CHARLES CAMERON said he had, thirteen or fourteen years ago, examined a specimen of urine for Mr. Thornley Stoker, who stated it was almost a matter of form, it being that of a young nobleman in robust health, well known in the hunting field. He found it contained a decided quantity of albumen, and said it would be better not to recommend the life; and he examined the urine six months later with the same result. Four years afterwards the nobleman died of Bright's disease. He attached much greater importance to the presence of albumen in the urine of a man apparently perfectly healthy than to its presence in that of a man suffering from illness of a transitory character; for there was disease of which it was a symptom. There were men in the medical profession in whose urine he had found albumen in large quantities, but at a time when they were suffering from illness to account for it.

DR. FOOT replied.—He concurred with Professor Purser as to the duty of a medical man to regard the interests of his company as paramount. He rejected albuminurics and risky lives, acting on the principle that it was better to have a few good sound lives whose premiums were sure for years than to pass lives at high premiums which might be lost at any time. It was difficult in some cases to give a decisive opinion, "yes" or "no," in answer to the question whether a particular life was a good one or not, so many circumstances had to be considered and weighed; but the company required that he should come to a definite conclusion without setting out his reasons. It was important to ascertain about scarlatina and infantile diseases—for instance, scarlatina was less likely to lead to renal complications in a child than in an adult. As regards the opium habit or morphinism, the point had been settled in the case of the Earl of Mar, that it did not shorten life. Hernia cases were suspicious, though a great many people wore trusses without need of them. Hæmorrhoids always suggested an examination of the rectum; for cancer of the rectum had often been called piles. He was against passing cases of organic disease of the heart. Syphilis and mercury were unfavourable conditions; but it was a matter of judgment how far the life might be shortened, and in such cases a consultation would be desirable. He concurred as to

the absurdly small fees for examining cases for policies of small amount. As regards females, as a rule men insure for women, not women for men; but there were ways of examining the urine or the rectum, and if there was a question of fissure or piles an examination should be made. He was not as trustful as Professor Purser, and he believed that alcoholism and morphinism were habits deteriorating the organ of truth. Tobacco, taken in large quantities, especially the coarse, common tobacco, handicapped the nervous system.

The Section adjourned.

FELO DE SE.

A FEW months ago the *New York Medical Record* discussed briefly whether the legal prohibition of suicide has any effect in diminishing the frequency of the "rash act." It is but a few years since suicide was made a crime in New York State; and statistics seem to show that legislation "does prevent or rather restrict self-murder." Previously to the anti-suicidal enactment suicides in New York State averaged 144 per million inhabitants. Since, the number of suicides has, indeed, increased; but not proportionally to the increase of population. The punishment for attempting suicide is imprisonment in State prison not exceeding two years, or fine not exceeding one thousand dollars, or both. This mild deterrent acts, the editor suggests, by discouraging attempts which are not intended to be successful. Is not, he asks, suicide accidental in some cases? Do not some "make a feint at suicide without really intending or wishing to end their lives, led to their foolish act, perhaps, by a desire to create sympathy, or in the hope of calling back an offended lover, the feigned attempt becoming, unfortunately, only too real in its fatal issue?" The decline is most notable in women. "Having no intention of killing themselves, they would be more likely to be deterred from making a pretence of so doing by the threat of a punishment held over them, whereas those who really wished to end their existence would be little influenced by a penalty which they would take care to escape by insuring a successful termination to their attempt."

PROGRESS OF CREMATION.

THERE are now 39 crematories in various parts of the world. Italy leads easily with 23, then comes America with 10, while England, Germany, France, Switzerland, Denmark and Sweden are satisfied so far with one apiece. In Italy there were 2 cremations in 1877; the number rose to 15 in 1877, and in 1878 the number was 226. Since 1876, 1,177 cremations have taken place in Italy, whilst the combined numbers from other countries bring the total only to 1,269.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.;
F. R. Met. Soc.; Diplomat in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, January 25, 1890.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.		Jan. 4.	Jan. 11.	Jan. 18.	Jan. 25.
Armagh -	36.1	5.2	15.5	20.7	Limerick -	22.9	29.7	21.6	20.2
Belfast -	33.9	34.1	43.3	45.4	Lisburn -	43.5	24.2	14.5	24.2
Cork -	20.1	21.4	33.7	34.4	Londonderry	19.6	23.2	32.1	48.1
Drogheda	21.1	29.6	50.7	4.2	Lurgan -	20.5	15.4	20.5	10.3
Dublin -	34.1	43.0	46.5	48.1	Newry -	21.1	24.6	14.0	17.6
Dundalk -	34.9	8.7	8.7	4.4	Sligo -	14.4	24.1	24.1	28.9
Galway -	20.2	13.4	23.5	33.6	Waterford -	27.8	16.2	32.4	6.9
Kilkenny	25.4	21.1	12.7	16.9	Wexford -	17.1	42.8	29.9	4.3

In the week ending Saturday, January 4, 1890, the mortality in twenty-eight large English towns, including London (in which the rate was 27.7), was equal to an average annual death-rate of 25.2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26.5 per 1,000. In Glasgow the rate was 30.6, and in Edinburgh it was 25.9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 30.4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4.6 per 1,000, the rates varying from 0.0 in seven of the districts to 12.5 in Londonderry. The 11 deaths from all causes registered in that district comprise 7 from whooping-cough. Among the 151 deaths from all causes registered in Belfast are 28 from measles (being 4 over the number of deaths from that disease in

the preceding week), 4 from whooping-cough, 1 from simple continued fever, 7 from enteric fever, and 4 from diarrhoea. The 17 deaths in Limerick comprise 3 from scarlatina, and the 9 deaths in Lisburn comprise 2 from measles.

In the Dublin Registration District the births registered during the week amounted to 204—102 boys and 102 girls; and the deaths to 236—114 males and 122 females.

The deaths represent an annual rate of mortality of 34·9 in every 1,000 of the estimated population, being 2·3 above the mean rate for the first week of the last ten years. Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 34·1 per 1,000.

Twenty-three deaths from zymotic diseases were registered, being 6 over the number for the preceding week, but 5 under the average for the first week of the last ten years. They comprise 3 from measles, 3 from whooping-cough, 1 from diphtheria, 5 from enteric fever, 3 from diarrhoea, 1 from dysentery, 1 from erysipelas, &c.

The number of cases of enteric fever admitted into the Dublin hospitals during the week was 24, being 7 under the admissions for the preceding week. Thirty-six enteric fever patients were discharged, 3 died, and 129 remained under treatment on Saturday, being 15 under the number in hospital on Saturday, December 28.

Six cases of typhus were admitted to hospital, being equal to the number of admissions for each of the two weeks preceding. Two patients were discharged, and 19 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

The hospital admissions include also 9 cases of measles and 1 case of scarlatina. In the preceding week 3 cases of the former and 2 of the latter disease were received. Thirteen cases of measles and 8 of scarlatina remained under treatment in hospital on Saturday.

Seventy-five deaths from diseases of the respiratory system were registered, being 20 in excess of the average for the first week of the last ten years, and 32 over the number for the week ended December 28. They comprise 52 from bronchitis, 15 from pneumonia or inflammation of the lungs, and 3 from pleurisy.

In the week ending Saturday, January 11, the mortality in twenty-eight large English towns, including London (in which the rate was 32·4), was equal to an average annual death-rate of 28·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 29·0 per 1,000. In Glasgow the rate was 32·4, and in Edinburgh it was 33·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 33·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·5 per 1,000, the rates varying from 0·0 in seven of the districts to 10·1 in Belfast. The 152 deaths from all causes registered in that district comprise 28 from measles, being equal to the number of deaths from that disease in the preceding week, 1 from scarlatina, 2 from typhus, 4 from whooping-cough, 1 from diphtheria, 6 from enteric fever, and 3 from diarrhoea. Among the 22 deaths in Limerick are 2 from scarlatina and 1 from typhus, and the 13 deaths in Londonderry comprise 1 from scarlatina and 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 142—72 boys and 70 girls; and the deaths to 299—167 males and 132 females.

The deaths, which are 79 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 44·2 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 43·0 per 1,000. During the first two weeks of the current year the death-rate averaged 39·5 per 1,000, and was 6·9 over the mean rate in the corresponding period of the ten years 1880-89.

Twenty-nine deaths from zymotic diseases were registered, being 6 over the number for the preceding week, but 3 under the average for the second week of the last ten years. They comprise 7 from measles, 2 from scarlet fever (scarlatina), 4 from influenza, 6 from whooping-cough, 1 from ill-defined fever, 3 from enteric fever (being 2 under the number of deaths from that disease in the preceding week), 1 from diarrhoea, &c. In one of the 4 cases of death from influenza the disease was complicated with laryngitis, in 2 with bronchitis, and in 1 with pleuro-pneumonia.

The number of cases of enteric fever admitted to hospital, which had fallen from 31, for the week ended December 28, to 24 in the following week, further declined to 18 this week. Twenty-one enteric fever patients were discharged, 2 died, and 124 remained under treatment on Saturday, being 5 under the number in hospital on Saturday, January 4.

In each of the three weeks preceding 6 cases of typhus were admitted to hospital, but no cases of the disease were received during this week. Fifteen cases remained under treatment in hospital on Saturday.

Five cases of measles and 2 of scarlatina were admitted against 9 cases of the former and 1 of the latter disease admitted during the week ended January 4. Fifteen cases of measles and 8 of scarlatina remained under treatment in hospital on Saturday.

The deaths from diseases of the respiratory system recorded amount to 112, being 58 in excess of the average for the corresponding week of the last ten years, and 37 over the number for the week ended January 4. They comprise 66 from bronchitis and 29 from pneumonia or inflammation of the lungs.

Eighty-one of the persons whose deaths were registered were aged 60 years or upwards, including 35 persons aged 70 and upwards. Of these 35 individuals 32 were octogenarians, and 3 (women) were stated to have been 90, 99, and 100 years old respectively.

In the week ending Saturday, January 18, the mortality in twenty-eight large English towns, including London (in which the rate was 32·1), was equal to an average annual death-rate of 27·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 27·2 per 1,000. In Glasgow the rate was 27·2, and in Edinburgh it was 34·1.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 39·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·1 per 1,000, the rates varying from 0·0 in nine of the districts to 12·7 in Drogheda. The 12 deaths from all causes registered in that district comprise 2 from typhus and 1 from diarrhoea. Among the 193 deaths from all causes registered in Belfast are 30 from measles (being 2 over the number of deaths from that disease in each of the two weeks preceding), 1 from scarlatina, 1 from typhus, 13 from whooping-cough, 1 from diphtheria, 5 from enteric fever, and 1 from diarrhoea. Among the 52 deaths in Cork are 3 from whooping-cough. The 16 deaths in Limerick comprise 2 from scarlatina. Of the 18 deaths in Londonderry 4 were from whooping-cough, 1 from diphtheria, and 1 from enteric fever; and the 14 deaths in Waterford comprise 2 from measles and 1 from diarrhoea. The Registrar of St. Mary's District, Drogheda Union, remarks:—"The prevailing epidemic of influenza has reached Drogheda, a great number of cases having occurred this week; but it is apparently of a mild type, no fatal case having come under my notice;" and the Registrar of Sligo, No. 1 District, states:—"One of the deaths in the Workhouse is certified as influenza, 11 days."

In the Dublin Registration District the births registered during the week amounted to 191—92 boys and 99 girls; and the deaths to 325—156 males and 169 females.

The deaths, which are 107 over the average for the corresponding week of the last ten years, represent an annual rate of mortality of 48·0 in every 1,000 of the estimated population. Omitting the deaths (10 in number) of persons admitted into public institutions from localities outside the district, the rate was 46·5 per 1,000. During the first three weeks of the current year the death-rate averaged 42·4 per 1,000, and was 9·8 over the mean rate in the corresponding period of the ten years 1880—89.

Thirty-eight deaths from zymotic diseases were registered, being 9 over the number for the preceding week, and 8 over the average for the third

week of the last ten years. They comprise 2 from measles, 13 from influenza (being 9 over the number of deaths from that disease registered in the preceding week), 5 from whooping-cough, 2 from diphtheria, 6 from enteric fever (against 3 for the preceding week), 2 from diarrhœa, &c. In 5 of the 13 cases of death from influenza the disease was complicated with bronchitis, in 4 with pneumonia, and in 2 with cardiac disease.

There has been a further decline in cases of enteric fever admitted to hospital, the number of admissions being 10, or 8 under the number for the preceding week, and 14 under that for the week ended January 4. Twenty-eight enteric fever patients were discharged, 4 died, and 102 remained under treatment on Saturday, being 22 under the number in hospital on Saturday, January 11.

No cases of typhus have been admitted to hospital during the last fortnight. There were only 9 cases of the disease in hospital at the close of the week.

Nine cases of measles and 2 of scarlatina were admitted, against 5 cases of the former and 2 of the latter disease admitted during the preceding week. Twelve cases of measles and 9 of scarlatina remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 75 in the week ended January 4, to 112 in the following week, further rose this week to 130, or 74 over the average for the corresponding week of the last ten years. The 130 deaths comprise 87 from bronchitis and 30 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 25, the mortality in twenty-eight large English towns, including London (in which the rate was 26·8), was equal to an average annual death-rate of 24·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·4 per 1,000. In Glasgow the rate was 25·5, and in Edinburgh it was 24·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 39·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·2 per 1,000, the rates varying from 0·0 in nine of the districts to 12·5 in Londonderry—the 27 deaths from all causes registered in that district comprising 6 from whooping-cough and 1 from diarrhœa. Among the 202 deaths from all causes registered in Belfast are 24 from measles (being 6 under the number of deaths from that disease in the preceding week), 1 from typhus, 11 from whooping-cough (being a decline of 2 as compared with the number for the preceding week), 3 from diphtheria, 3 from enteric fever, and 5 from diarrhœa. The 53 deaths in Cork comprise 2 from whooping-cough,

1 from enteric fever, and 3 from diarrhoea. The Registrar of Belfast, No. 2 District, remarks:—"One death from influenza;" the Registrar of Belfast, No. 3 District, states:—"One death was certified as influenza, 2 days; pulmonary congestion, 12 hours;" and the Registrar of St. Mary's District, Drogheda, says:—"The influenza epidemic still continues."

In the Dublin Registration District the births registered during the week amounted to 194—94 boys and 100 girls; and the deaths to 330—155 males and 175 females.

The deaths, which are 100 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 48·7 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 48·1 per 1,000. During the first four weeks of the current year the death-rate averaged 44·0, and was 11·0 over the mean rate in the corresponding period of the ten years 1880—89.

The number of deaths from zymotic diseases registered is 37, being 1 under the number for the preceding week, but 7 in excess of the average for the fourth week of the last ten years. They comprise 5 from measles, 1 from scarlet fever (scarlatina), 8 from influenza (being 5 under the number of deaths from that disease registered in the preceding week), 10 from whooping-cough (being double the number of deaths from whooping-cough in the preceding week), 8 from enteric fever (being an increase of 2 as compared with the preceding week), &c. In 4 of the 8 cases of death from influenza the disease was complicated with bronchitis, in one with pneumonia, and in one with phthisis.

Twelve cases of enteric fever were admitted to hospital, being 2 over the number of admissions for the preceding week, but 6 under the number for the week ended January 11. Thirty-one enteric fever patients were discharged, 1 died, and 82 remained under treatment on Saturday, being 20 under the number in hospital at the close of the preceding week.

Ten cases of measles were admitted to hospital against 9 for the preceding week, and 5 for the week ended January 11. Eight patients were discharged, 1 died, and 13 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, January 18.

Only 1 case of scarlatina and 1 of typhus were admitted to hospital. The typhus case is the only one of that disease admitted during the last three weeks. There were only 8 cases of scarlatina and 6 of typhus under treatment in hospital on Saturday.

The registered deaths from diseases of the respiratory system amount to 130, being equal to the high number for the preceding week, and 64, or 97 per cent., in excess of the average for the fourth week of the last ten years. They comprise 85 from bronchitis and 32 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of January, 1890.*

Mean Height of Barometer,	-	-	-	29·740 inches.
Maximal Height of Barometer (on 29th, at 4 p.m.),	30·450	"		
Minimal Height of Barometer (on 23rd, at 7 45 a.m.),	28·693	"		
Mean Dry-bulb Temperature,	-	-	-	44·1°.
Mean Wet-bulb Temperature,	-	-	-	41·8°.
Mean Dew-point Temperature,	-	-	-	39·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·243 inch.
Mean Humidity,	-	-	-	83·1 per cent.
Highest Temperature in Shade (on 16th),	-			56·8°.
Lowest Temperature in Shade (on 29th),	-			31·1°.
Lowest Temperature on Grass (Radiation) (on 29th),	24·9°.			
Mean Amount of Cloud,	-	-	-	58·6 per cent.
Rainfall (on 21 days),	-	-	-	2·975 inches.
Greatest Daily Rainfall (on 26th),	-	-	-	·843 inch.
General Directions of Wind,	-	-	-	S.W., W.

Remarks.

January, 1890, proved a tempestuous, mild, and rainy month. Rough southerly to westerly winds blew with little intermission, and frequently freshened into strong or violent gales, especially in the west of Ireland. Even in Dublin, eleven gales were recorded, some of them being downright tempests. Almost throughout the month atmospherical pressure was low over the Atlantic Ocean in the W., N.W., and N., high over central and southern Europe. On several occasions thunder and lightning accompanied the storms.

In Dublin the mean temperature (44·5°) was much above the average (41·4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44·1°. In the twenty-five years ending with 1889, January was coldest in 1881 (M. T. = 32·2°), and warmest in 1875 (M.T. = 46·6°). In 1867 the M. T. was 35·7°, and in 1865 it was 37·8°. In 1871 and in 1886 the M. T. was 37·9°; in the year 1879 (the "cold year") it was 35·3°. In 1888, the M. T. was 42·1°, and in 1889 it was 42·4°. As a general rule, January in Dublin is not colder, but rather a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the north-westward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1890, proved no exception to this rule, the M. T. being 0·7° above that of December, 1889, (43·8°).

The mean height of the barometer was 29·740 inches, or 0·141 inch below the average value for January—namely, 29·881 inches, and as

much as 0·410 inch below the mean for January, 1889—namely, 30·150 inches. The mercury rose to 30·450 inches at 4 p.m. of the 29th, and fell to 28·693 inches at 7 45 a.m. of the 23rd. It had been lower in the early morning hours. The observed range of atmospherical pressure was, therefore, as much as 1·757 inches—that is, a little over one inch and three-quarters. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44·1°, or 0·8° above the value for December, 1889. Using the formula, *Mean Temp.* = *min.* + (*max.*—*min.* × ·52), the value becomes 44·7°, compared with a twenty-five years' average, 41·5°. The arithmetical mean of the maximal and minimal readings was 44·5°, compared with a 25 years' average of 41·4°. On the 16th the thermometer in the screen rose to 56·8°—wind, S.S.W.; on the 29th the temperature fell to 31·1°—wind W.N.W. The minimum on the grass was 24·9° on the same date. The rainfall was 2·975 inches, distributed over 21 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2·200 inches, and the average number of rainy days was 17·3. The rainfall and the rainy days, therefore, were both considerably above the average. In 1877 the rainfall in January was very large—4·322 inches on 25 days; in 1869, also 4·258 inches fell—on, however, only 18 days. On the other hand, in 1876, only ·406 of an inch was measured on but 9 days; and in 1880, the rainfall was only ·563 of an inch on but 8 days. In January, 1886, 3·244 inches of rain were measured on as many as 26 days, in 1887 ("the dry year"), 1·816 inches fell on 16 days, in 1888 1·247 inches on 9 days, and in 1889, 2·213 inches on 16 days.

A solar halo was seen on the 29th. Lunar halos were seen on the 7th and 27th. The atmosphere was foggy on each of the first two days, as also on the 27th. High winds were noted on 21 days, reaching the force of a gale on eleven days. Hail fell on the 18th, 19th, and 23rd, and snow or sleet on the 19th, 20th, 22nd, 23rd, and 28th. Temperature exceeded 50° in the screen on 17 days, compared with 8 days in January, 1889; while it fell to or below 32° in the screen on only 1 night, compared with 3 nights in January, 1889. The minima on the grass were 32°, or less, on 15 nights, compared with 16 nights in January, 1889.

At the beginning of the month changeable, but for the most part mild, weather held in Ireland and Scotland, while severe cold was experienced in central and eastern England, where also fogs of great density prevailed. These conditions were determined by the persistence of an anticyclone over Germany, France, and England, whereas pressure was relatively low over the Atlantic to the westward and northward of the British Islands. In Dublin the weather was generally fine—calm and fog alternating with clouds and squalls from S.W. Temperature was very unsteady in Dublin, which was on the borderland between the low anti-

cyclonic temperatures of England and the high temperatures of the Atlantic seaboard.

The week ending Saturday, the 11th, was one of stormy, open weather, with frequent falls of rain, which, however, were not heavy on the east coast of Ireland. In Dublin the mean temperature was 8° above the average. All through, an oval anticyclone held over France and Germany—the barometer rising to 30·75 inches at Munich at 8 a.m. of Tuesday, the 7th—while a series of extensive and deep depressions skirted the western and northern coasts of Ireland and Scotland on their passage northeastwards. The week opened with a violent S.W. gale, which was accompanied with severe and fatal thunderstorms in the southwest and west of Ireland. At 8 a.m. of Sunday pressure varied from 28·73 inches at Stornoway, in the Hebrides, to 30·35 inches at Munich. On Tuesday temperature rose to 56° or 57° at many stations in the United Kingdom. In Dublin the mean height of the barometer during the week was 29·876 inches. The mean temperature was $48\cdot4^{\circ}$. Rain was measured on six days, the total quantity being ·262 inch.

Stormy, unsettled weather, and high but variable temperatures prevailed throughout the week ending Saturday, the 18th. The barometer was continuously high over the Peninsula and Central Europe, very low over the Atlantic and Norwegian Sea, and most unsteady in the British Islands and Scandinavia. The result was that strong southwesterly gales raged from time to time on the British coasts. The storms culminated in a tempest on Friday night and Saturday morning. On Saturday afternoon also a violent S.W. gale prevailed, accompanied by driving showers of rain and hail, and by flashes of sheet lightning after dark. On Thursday the air was soft and balmy as in late spring—the maximal temperature being $56\cdot8^{\circ}$ and the minimal temperature being $50\cdot3^{\circ}$. In Dublin the mean height of the barometer was 29·787 inches. The mean temperature was as high as $48\cdot6^{\circ}$. The rainfall was distributed over four days and amounted to ·499 inch. Hail fell on Saturday, on the evening of which day also lightning was seen.

The period ending Saturday, the 25th, was most unsettled, stormy, rough and wet. Temperature was much lower than in the two preceding weeks, but it was very unsteady. A number of extensive and deep atmospherical depressions passed across north-western Europe during the week, causing violent gales, thunderstorms, and heavy falls of rain and sleet. Of these disturbances, the deepest was that of Sunday, January 19, at 8 a.m., of which day pressure varied from 30·37 inches at Lisbon to 28·23 inches at Stornoway, in the Hebrides. At 9 30 a.m. a violent hailstorm occurred in Dublin, and during the day thunder and lightning prevailed in Ireland, Scotland, and the west of England. Another deep depression came in over Scotland on Tuesday, causing a renewal of bad weather. This system was quickly followed by a cyclone

of great intensity, the centre of which passed eastwards south of Dublin, where the wind backed through E. and N.E. to N. and N.W., with a heavy fall of cold rain and sleet. A S.W. to W. gale of exceptional violence blew in the English Channel. A curious effect of the arrival of this depression was to cause a temporary calm in Scotland, accompanied by sharp frost, the thermometer falling to 21° at Aberdeen on Thursday morning and not rising above 28° at that station during the day. A final area of low barometer reached Ireland on Friday night. It brought high temperatures and a strong S.W. gale. In Dublin the mean height of the barometer during the week was only 29.207 inches. The mean temperature was 41.3° . The rainfall amounted to .983 inch on six days—.504 inch being registered on Wednesday the 22nd.

Although still changeable in many respects, the weather moderated considerably after Sunday, the 26th, on which day a fresh S.W. gale was felt. Both on the 26th and 27th the barometer over the south of France stood about two inches higher than it did off the W. coast of Norway, and consequently westerly winds of great strength prevailed. In Dublin Sunday's gale was accompanied by a very heavy rainfall—more than eight-tenths of an inch being registered in 12 hours. In Dublin the mean height of the barometer in the week ending Saturday, February 1, was 30.123 inches. The mean temperature was 43.2° . Rain fell on four days—the total measurement being 1.204 inches, of which .843 inch fell on Sunday, the 26th.

PERISCOPE.

ALCOHOLIC TRANCE.

A SUGGESTIVE paper was read before the International Medico-Legal Congress at New York, in June last, by Dr. T. D. Crothers, of Hartford, Conn., in which evidence is adduced of the existence, in some cases of alcoholic intoxication, of a paralysis of memory, similar to that known to occur in cases of epilepsy. To such condition the author gives the name, "alcoholic trance." The importance of the question whether such failure of memory exists, or, if existing, can be inferred, on grounds satisfactory to the legal mind, in criminal cases, is obvious. "This condition," says Dr. Crothers, "should be fully recognised by court and jury, and the measure of responsibility and punishment suited to each case. They should not be punished as criminals, nor should they be liberated as sane men. They should be housed and confined in hospitals." It is admitted that an epileptic state exists in which acts are performed which leave no trace in subsequent memory; and that for such acts the doers are not criminally responsible. It is probable that an analogous condi-

tion exists in certain drunkards. Are they to enjoy similar irresponsibility? There are signs that the old distinction between unavoidable disease and voluntarily incurred intoxication is, as regards responsibility for crime, losing its power over the public, and even over the legal mind.

BRITISH MEDICAL SERVICE.

THE following is the official list of surgeons on probation of the Medical Staff of the British Army who were successful at both the London and Netley Examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—1. Hughes, M. L., 5,512 (gained the Parkes Memorial Bronze Medal); 2. Mould, W. T., 5,362; 3. Bewley, A. W., 5,180; 4. Stone, C. A., 5,076; 5. Waller, H. J., 4,968; 6. Winter, H. E., 4,766; 7. Moores, S. G., 4,730; 8. Way, L., 4,666.—February 3rd, 1890.

ARMY MEDICAL DEPARTMENT.

THE DIRECTOR-GENERAL has favoured us with the following official list of the successful candidates at the recent competitive examination for commissions in the Medical Staff of Her Majesty's Army, held during February, 1890:—

Order of Merit	Names	Total number of Marks
1	Jackson, R. W. H.	3,005
2	M'Loughlin, G. S.	2,935
3	Beveridge, W. W. O.	2,905
4	Smithson, A. E.	2,860
5	Forde, B.	2,835
6	Whiston, P. H.	2,825
7	Bray, G. A. T.	2,765
8	Mawhinney, R. J. W.	2,750
9	Parry, H. J.	2,700
10	Ferguson, J. D.	2,660

TRACHEOTOMY IN DIPHTHERIA.

M. VAN STERSON, Professor of Surgery at Leyden, reports 55 successful cases from 100 tracheotomy operations performed for diphtheria. He ascribes his success to—1st, early operation; 2nd, the inferior operation; 3rd, operation prior to asphyxia; 4th, to dry wiping of the trachea and larynx with small sponges impregnated with iodoform after the trachea is opened. Chloroform is the anæsthetic he uses.—*Revue de Thérapeutique*, December 1st, 1889.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Solutio Iodi (Downes).

MR. R. J. DOWNES, Licentiate of the Pharmaceutical Society of Ireland, has lately invented and prepared a novel solution of iodine, which appears to us to possess several valuable properties. Thus, when rubbed into the skin, it is freely absorbed—a crucial test of which is that symptoms of iodism have followed its use. Again, it does not blister the surface, and accordingly it can be rubbed in over the same part time after time. It is very easily applied—all that is necessary being to pour a few drops on the palm of the hand, or even one finger, and to rub the solution in persistently over the surface intended to be affected.

We understand that Mr. Downes has protected his solution, and intends to take out a patent for it. Consequently, we are not in a position to give the exact composition of the preparation. It appears, however, to be a combination of iodine with oleic acid—in fact, an oleate of iodine. We have tested the solution, and find it fulfils all the advantages claimed for it by its inventor. The sole wholesale agents are Messrs. Brooks & Co., 136 Lower Baggot-street, Dublin.

Lanoline Toilet and Ichthyol Soaps.

We have been favoured by Messrs. Burroughs, Wellcome, & Co., of Snow Hill Buildings, London, E.C., with specimens of lanoline soap of two kinds. The first is intended for toilet use, and is suitably perfumed. It is sold in shilling tablets of large size in neat paper cases. We observe that it is manufactured at Martinikenfelde, Germany. Messrs. Burroughs, Wellcome, & Co. state that this soap is the first of its kind introduced into this country—it is, in fact, the first soap introduced to the Medical profession containing an excess of fat. Moreover, the excess of fat consists of lanoline, which under ordinary circumstances is not saponifiable. The lanoline is set free in the water during washing, whence it is absorbed by the skin, for which it appears to have an affinity. Lanoline takes the place of the natural fat which is washed away, and thus contributes greatly to nourish the skin, and to preserve its natural softness and healthful condition. It is said to be a superior soap for use in skin diseases. The second kind of lanoline soap contains ichthyol, or sulpho-ichthyolate of ammonium, now often used as an internal as well as topical remedy in chronic skin affections and in chronic rheumatism. Ichthyol-lanoline soap seems to be an excellent form for use in skin diseases, rheumatism, and gout. It contains 10 per cent. of ichthyol and 10 per cent. of lanoline. A drawback is its rather unpleasant odour of ichthyol, but this is remedied by laving the surface with clean, tepid water once the soap has done its work. There is little doubt that these lanoline soaps will prove a useful addition to the *armamentarium medicum*.

In Memoriam.

SIR ROBERT J. KANE, F.R.S., LL.D., UNIV. DUBL.;
D.Sc., R.U.I. (Honoris Causa), F.K.Q.C.P.

It would be unbecoming did the pages of *The Dublin Journal of Medical Science* pay no tribute to the memory of the distinguished man of science whose genius and energy, even while he was but a medical student, gave birth to its forerunner, "*The Dublin Journal of Medical and Chemical Science*."

SIR ROBERT JOHN KANE was born on the 24th of September, 1809, and died, after a short illness, at his residence, 2 Wellington-road, Dublin, on Sunday, the 16th of February, 1890, in the eighty-first year of his age.

DR. KANE, by which name he was known when he published his "*Industrial Resources of Ireland*," was the son of a Dublin chemist, and in 1830 had obtained Dr. Graves's prize, awarded at the Meath Hospital, where he studied Practice of Medicine, for the best essay on the "*Pathological Condition of the Fluids in Typhus Fever*." He was educated in Trinity College, Dublin, where he graduated as Bachelor of Arts in 1835. He had previously (May 6, 1835) become a Licentiate in Medicine of the King and Queen's College of Physicians in Ireland, to the Fellowship of which body he was elected on October 30th, 1843.

DR. KANE served for many years as a Member of the Court of Examiners of the Apothecaries' Hall of Dublin, and he was Professor of Chemistry and of Practical Chemistry in the School of Medicine in Cecilia-street established by the Governor and Court of Directors of the Hall, even at a time when he was still a medical student.

As an effect of the interest in medical and pathological science which sprang from the enthusiastic clinical teaching of Graves and Stokes, and the equally enthusiastic anatomical teaching of Macartney, at a time when no medical periodical existed in Ireland, the first number of *The Dublin Journal of Medical and Chemical Science*—a bi-monthly periodical—appeared in March, 1832. The original projector and first editor of that journal was DR. ROBERT KANE.

After the appearance of the first few numbers DR. KANE had associated with him in his editorial capacity Drs. Graves and Stokes; and as the Journal assumed a more practical character, and DR. KANE became more engaged in chemical investigations, its management was chiefly conducted by his illustrious colleagues, assisted for some time by a distinguished surgeon—Prof. W. H. Porter, father of Sir G. H. Porter, Bart.

When DR. KANE obtained the Professorship of Natural Philosophy to the Royal Dublin Society, in 1834, he resigned his connection with *The Dublin Journal*, in a letter published in the seventh volume, in which he says, "that having anxiously watched over its infant struggles, and seen it after but a brief adolescence take a place among the medical periodicals of Europe, creditable to our country and highly gratifying to its supporters, I terminate my editorial labours."

The section headed "Scientific Intelligence" in this forerunner of the *Dublin Journal of Medical Science*, from which the present Journal has come down by lineal and uninterrupted descent, received the editor's devoted care and attention. The "Scientific Intelligence" is still a model for the retrospects which have since appeared in this country and on the continent. It was divided into sub-sections embracing chemical and physical science, botany and natural history, anatomy and physiology, pathology and therapeutics, surgery, legal medicine and toxicology, and materia medica and pharmacy.

DR. KANE held the appointment of Professor of Natural Philosophy to the Royal Dublin Society from 1844 till 1847, and in the latter year the Royal Irish Academy awarded him the Cunningham Gold Medal for his discoveries in Chemistry. He had been a Member of the Royal Irish Academy from 1832, was placed upon its Council in 1841, and was afterwards elected its Secretary—an office which he continued to fill until he received the appointment of President of the Queen's College, Cork.

He had presented, in 1840, to the Royal Society of London, some researches on the colouring matter of the lichens, which were subsequently published in the "Philosophical Transactions," and for which he received the Royal Medal. In 1843 he delivered a series of lectures on the different sources of industry which exist in Ireland. In 1846 the measures recommended by him for the formation of a Museum of Industry in Ireland were carried out, the Museum in St. Stephen's-green, Dublin, was created, and he was appointed Director, the Ordnance Zoological and Mineral Collection of Mountjoy Barracks, in the Phoenix Park, being removed to it. DR. KANE's most extensive work, "The Elements of Chemistry," appeared in 1842; and the "Industrial Resources of Ireland" in 1844. DR. KANE was, in 1845, appointed, in conjunction with Professors Lindley and Playfair, to examine into the cause and means of preventing the potato blight. In 1846 he received the honour of Knighthood from Lord Heytesbury, then Lord Lieutenant, in acknowledgment of his services to science, and was appointed one of the Irish Relief Commissioners. He resigned the Presidency of Queen's College, Cork, in 1864, and in 1875

was appointed a Commissioner of National Education. As a scientific chemist he had few, if any, equals in this country, and his works on chemistry and on economics, of which "The Industrial Resources of Ireland" is the best known, hold a very high place. He was President of the Royal Irish Academy for many years, and was one of the first Roman Catholics elected by the Board of Trinity College on the Academical Council of the University.

In an appreciating obituary notice, to which we owe our knowledge of many of the facts mentioned in this memoir, the *Daily Express* newspaper of Tuesday, February 18, 1890, pays the following tribute to the political and social character of SIR ROBERT KANE:—

"In politics he was a strong and consistent Liberal, and a supporter of Mr. Gladstone until 1886, when, with so many of his party, he declined to merge his Liberalism in Parnellism.

"Manly, straightforward, kindly, and sympathetic, SIR ROBERT KANE was one of whom Irishmen of all creeds were justly proud. His love of liberty and whole-hearted detestation of intolerance secured him a host of friends, and brought him into contact with many of the greatest exponents of freedom of his age. To Count Cavour he extended an Irish welcome when he visited these shores; and not the least notable quality he possessed was the rare one of attracting the respect and friendship of men who differed from him, and whose lines ran in far different grooves from his. His talents were of a very high order, and his scholarship ripe and thorough. Without ostentation, he laboured long and assiduously to benefit his native land and bring prosperity and comfort within the reach of the humblest of his countrymen. By his death is severed one more of the few links that remain to bind the Ireland of to-day with 'the distressful country' of half a century ago. KANE was a young man of twenty when the Royal assent was given to Catholic Emancipation, a college student at the passing of the Reform Bill in 1832, and a man in the full vigour of work during the famine of 1846 and the abortive rebellion of 1848. Of the vicissitudes of his country's history few had a larger or more interesting experience, and his loss as an authority on many points connected with the stirring times he passed through will be felt by many who had the privilege of his acquaintance."

SIR ROBERT KANE leaves, with other children, two sons—Captain Henry Kane, whose bravery when in command of the "Calliope" recently called forth such warm admiration, and Mr. Robert R. Kane, a legal Commissioner under the Land Act of 1881.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

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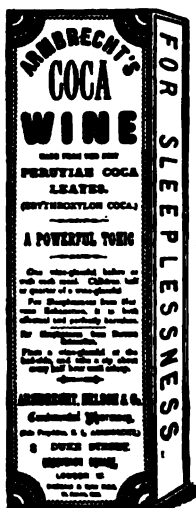
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APRIL 1, 1890.

PART I.

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ART. XII.—*Suprapubic Lithotomy in relation to the Treatment of Encysted Calculus.* By J. S. M'ARDLE, F.R.C.S.I.; Fellow of the Royal Academy of Medicine in Ireland; Surgeon and Lecturer on Surgery, St. Vincent's Hospital.

(Continued from page 226.)

SUTURE.

THE question of suture of the bladder is one which is at the present moment engaging the attention of most surgeons interested in the advance of this department of surgery. There is a strange diversity of opinion even yet as to whether the bladder should or should not be sutured, and when we study the writings of those who advocate vesical suture there is very marked divergence of opinion not only as to the method of suture but also as regards the materials to be used in such suture.

The opinions of a few surgeons, as given below, will indicate the present position of the question—"Suture or no Suture?"

Dorfwith.—Will never use it again, as it retards cicatrisation.

Perier.—If not dangerous, it is at least useless.

Le Dentu uses only *one* suture on each side, to unite the muscular and connective tissue to the bladder.

Belmas says—"To come back to it would be to bring surgery to its first infancy."

Such opinions as the above are very generally held. Many recommend complete suture, while some advocate partial closure of the wound, foremost amongst them being Guyon, who for a

long time was a vigorous opponent of suture at all, and is still opposed to complete suture. He says that, applied after his method (given below), suture favours drainage, shortens the time, and directs the course of healing. The case which induced him to adopt suture was an instance of rupture of the bladder at the cicatrix six years after operation. On examining the wound which had not been sutured, he found that only the superficial parts had united, and that a funnel-shaped cavity existed at the upper and anterior part of the bladder, its base corresponding to the mucous coat which had never undergone repair (*Albarran. Bul. et Mém., Soc. Chir.* 285, 1888).

GUYON'S METHOD.

On each side of the wound at the middle the vesical wall is held up by a suspensory thread of carbolised silk; above and below this three or four catgut sutures are used to draw the submucous tissues together. A second row is used in bringing together the muscular and connective tissue coats of the bladder. A third row of hair or silver wire closes the abdominal wound, with the exception of its middle portion, through which the drainage tubes are passed, and there tied by the suspensory threads. On the fourth day the tubes are removed, and healing is complete inside a fortnight.

Experimental research and clinical experience combine to prove that suture is not only useful, but absolutely necessary, if we are to avoid danger and procure a rapid and permanent healing after suprapubic lithotomy. There can be no better way of determining the value of suture than by comparing the results of the opponents with those of the advocates of suture, when it will be found that healing without suture took place from the twenty-first to the ninetieth day. After careful suturing, healing was complete from the seventh to the thirteenth. After suturing there has not been a bursting of the cicatrix; rupture has frequently followed healing without suture. The mortality does not seem to be much influenced by the presence or absence of suture, as in Assendelft's 102 cases without suture there were only 2 deaths, and these were not attributable to the operation. In Subbötich's (*Wiener med. Presse.* 1887, 35 & 36) 5 cases, 3 sutured, 2 not sutured, there was no death. Of Alexandroff's 26 cases, 2 without suture healed on twenty-first and forty-seventh day; 16 with suture and superficial drainage, all healed about tenth day; 8 complete suture, no drainage, healed by primary union before tenth day.

Secondary Suture—The question of secondary suture I may mention before I call attention to the different methods of applying the suture. Neuber (*Centralblatt für Chir.*, 24, p. 57, 1888), to avoid infiltration, recommends the following procedure:—First, the bladder is exposed by vertical incision 3 inches in length, the wound is plugged, and on the sixth or seventh day, when the cellular spaces are closed, the bladder is incised, and the stone removed. The bladder is now sutured, and six days later, if the vesical suture has taken, the abdominal wall is closed. Six operations thus conducted ended satisfactorily. Guiard (*Ann. des Mal. des Org. Gen.-Urin.*, 1887) sutures the bladder with catgut, at the same time he lays in, but does not tie, silver sutures of the abdominal wall. A double drainage tube, oval on section, is placed in the middle of wound. On the third or fourth day this tube is removed, and the wound closed by the suture above mentioned. He claims for this method the advantage that, owing to the complete drainage, the lips of the wound are kept at rest, and primary healing is allowed. The open condition of the skin incision allows free escape of urine, should any of the vesical sutures yield during the first few days; thus the danger of infiltration is avoided. By the time the drainage tube is removed the vesical wound is closed in the greater part of its extent; the tying of the silver suture then supports the line of healing.

Complete and immediate suture has numerous advocates, and in uncomplicated cases its many advantages cannot be questioned. In children especially it is advisable, since in them—first, repair is more rapid and permanent; second, the bladder is usually healthy; third, the operative procedure is easier; fourth, the lips of the incision are thick; and fifth, the position of the peritoneum is very favourable for the high operation.

MATERIALS USED.

Catgut, silk, hair, and silver wire all have their advocates. Catgut sutures have a tendency to cut through vesical tissue, and in Krabbel's 12 cases there were 7 failures, the cause being the swelling of the catgut, owing to absorption of the fluids in the wound, strangulating the friable muscular fibres engaged in the suture, their vitality being thus rapidly compromised.

Hair sutures do not cut through muscular tissue (Bouilly). On the fifth day in experimental suture catgut was found loose; hair suture was firm until union was complete. Absorption of the fibres

immediately in relation with the suture may take place, but as the hair does not swell, the greater portion of the tissue taken up by the suture persists. Hair suture, when kept in a 1 to 20 solution of carbolic acid for some months, becomes very pliable.

Silk is the material relied on by most surgeons now for vesical as for intestinal suture, as much of the catgut now procurable is of questionable origin, while its condition as regard asepsis is equally doubtful. Silk is pliable, is not brittle, does not swell as much as catgut, and it can, by boiling, be made perfectly aseptic. I doubt if there is any real objection to it, and certainly for all the deeper sutures it is reliable, while Veincent, Baudon, and others, recommend the metallic suture for the superficial structures. Properly applied metallic suture affords support to the tissues round the wound, and rarely causes any destruction of tissue.

For any suture to be successful, as pointed out by Bouilly and Veincent—first, the points of suture must be close to each other; second, the threads must pass as near as possible to the mucous membrane without penetrating it; third, the orifices of the suture must be 8 to 10 millimètres apart.

In the experiments conducted on dogs by Mayimon, death occurred—first, when the mucous membrane was caught up in the suture; and second, when the sutures were far apart, allowing urinary infiltration.

VARIETIES OF SUTURE.

As in intestinal suture, so in the vesical, endless so-called improvements are made in the methods of its application. I shall briefly refer to a few of the procedures worthy of notice—

First, and probably of most importance, is the method of suture known as the Lembert, so much used in the closure of intestinal wounds. This suture is shown in Fig. 5. If this suture be applied at regular and short intervals, the bladder can be hermetically sealed, broad surfaces of vesical tissue are brought into contact, and where the bladder is sound rapid and firm union takes place.

Second.—Rydygier (*Wien. med. Woch.*, April 14 and 21, 1888) uses a double suture alternating as in Fig. 6. This, but for the delay occasioned by the laying-on of the primary or finer suture, is the most reliable of the varieties of suture. Veincent also advocates this suture, recommending catgut for the deep, metallic for the superficial line. All the threads being cut off close to knot, the catgut sutures are absorbed, the metallic become encysted.

Fig. 5

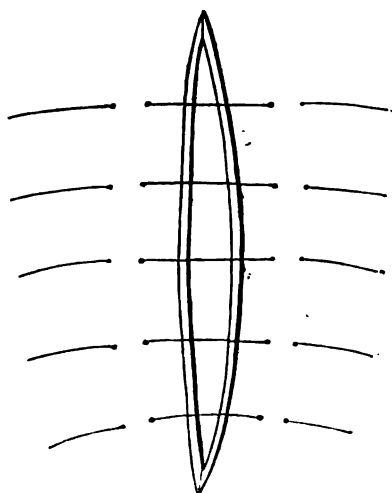
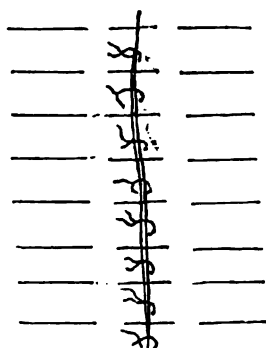


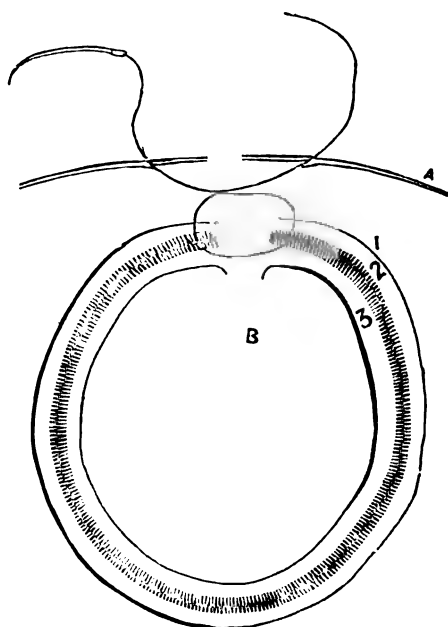
Fig. 6



Third.—Gehler (*Taille Hypogastrique*, Bouilly, Paris, 1883) used a suture taking up the walls of the bladder and the abdominal wall. This simple *vesico-cutaneous* suture is an unsafe one, since the abdominal wall may heal rapidly, and the bladder wound remaining open, infiltration is almost certain to occur.

Fourth.—Baudon (*Taille Hypogastrique*, Bouilly, Paris, 1883) describes a crossed vesico-cutaneous suture (Fig. 7), recommending metallic threads. This is open to the same objection as the preceding one, and is not likely to find many advocates.

Fig. 7

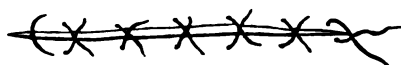


^a Abdominal wall.

1, Fibrous ; 2, Muscular ; 3, Mucous Coat of Bladder.

Fifth.—Simple continuous suture (Fig. 8) has been employed, but as all sutures are liable to cut through the vesical tissue, if any part of a continuous suture presses unduly, strangulation and breaking down of the tissue takes place, and the entire line of suture becomes ineffective. Few now depend on a continuous suture for vesical or intestinal wounds.

Fig. 8

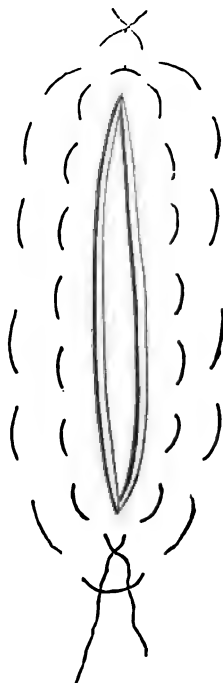


Sixth.—Some surgeons use a deep interrupted suture, and a superficial continuous suture. This is an easily applied and fairly effective suture. I have used it in longitudinal wounds of the intestine successfully.

Seventh.—Brenner (*Arch. für klin. Chir.* Bd. 35, H. 1) describes a variety of suture aptly called "Purse-string" (*Schnürnaht*).

The wound is surrounded by two threads (Fig. 9), one in the sub-mucous tissue, close to the edge of the wound—a second in the muscular tissue, 8 millimètres external to this. Traction on these threads puckers up the tissues of the bladder into a solid mass at the site of the wound. In his experiments Brenner found that hyper-distension caused rupture of the bladder, but never at the line of suture. He experimented on the dead subject, then on dogs, and finding the method reliable, applied it in his cases with complete success. I have applied this suture with satisfactory result where I found the bladder-wall thin, but where the vesical tissues are normal Lembert's method is more satisfactory, as it does not endanger the vitality of a large piece of the bladder-wall, such as would occur if either suture in Brenner's method became too tight through swelling of the tissues or the threads.

Fig. 9



Eighth.—Another continuous suture (Fig. 10), which may be called lace suture, is the one described by Neidzwiedzki (*Central-*

blatt für Chir., 1889, 30). I have no experience of this method, but I should say it is difficult of accurate application, and of course it is open to the same objection as all continuous sutures.

Fig 10.

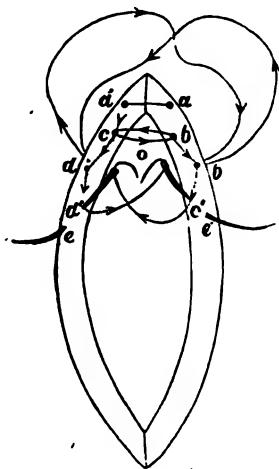
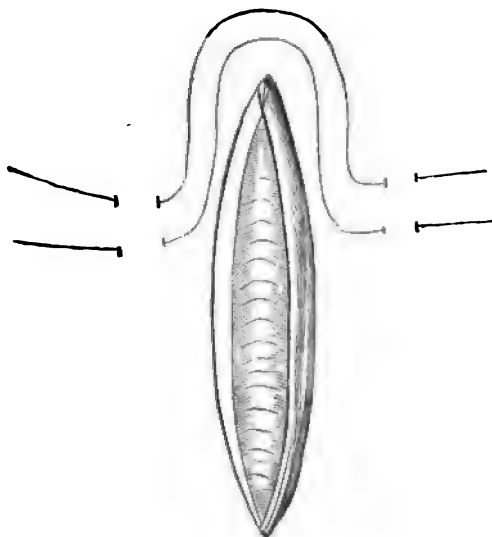


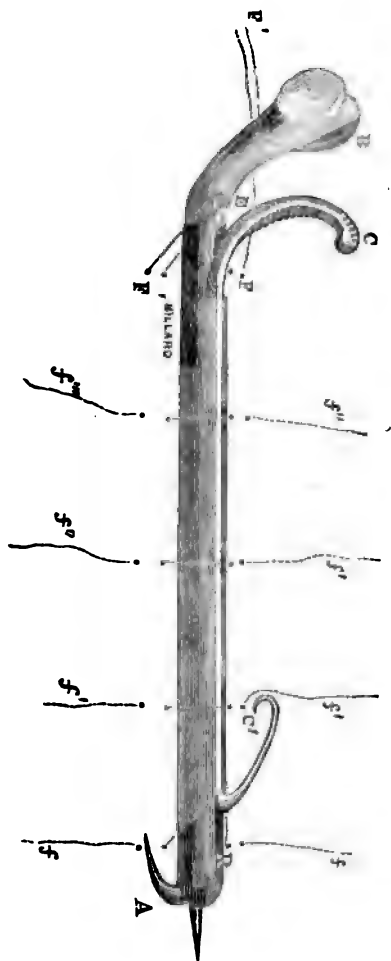
Fig. 11



The "Suture Préalable" (Fig. 11) is recommended by Duchastelet,

and for its application the instrument (Figs. 12 and 13), taken for Bouilly's work (*Taille Hypogastrique*, Paris, 1883), affords an easy

Fig. 12



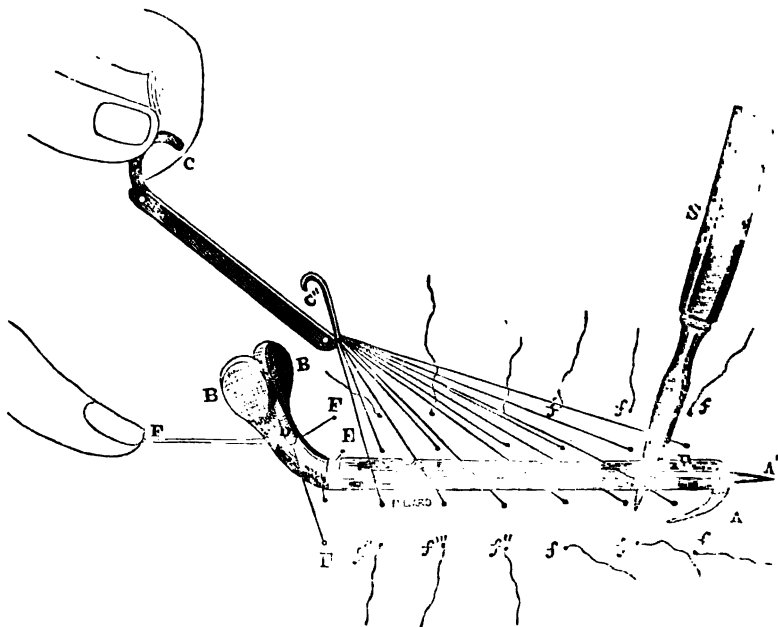
and accurate way of applying it. The advantages claimed for this previous suture are—

1st. It permits the symmetric and regular placing of the threads while the bladder is still full, and easily got at by sight and touch, and neither blood nor urine obstructs the field of operation.

2nd. The instrument serves as a guide for the length of the vesical incision and direction of the bistoury.

3rd. After removal of the stone the vesical surfaces can be rapidly brought back to back, hermetically sealing the wound.

Fig. 13



Notwithstanding the diversity of opinion as to the extent of suture, the materials to be used, or the method of application to be adopted, most surgeons agree that to leave the wound open, as suggested and practised by Thompson, is to inordinately delay healing, and to expose the patient to many accidents avoidable by careful suture. And I think I am expressing the opinion of the majority when I say that complete suture should be carried out in children always, and in adults when the bladder is healthy. When the bladder is diseased the suture and drainage described by Guyon becomes necessary.

In reference to this subject in children, Alexandroff, after an exceptional experience, concludes that—

1. High section is best in children.
2. Vesical wall should always be sutured.

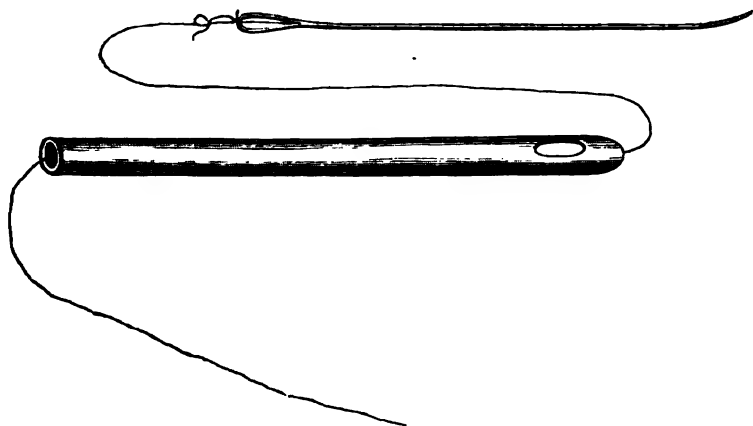
3. Silk is the best material.
4. Drainage of the pre-vesical tissue is unnecessary.
5. The catheter may be removed on the third day.
6. An alkaline condition of the urine is no bar to the operation or to suture.

DRAINAGE.

In many cases where the bladder is healthy, and complete suture has been adopted, a catheter allowed to remain in the bladder for a few days is, with regular catheterisation afterwards, sufficient, but where cystitis is present it becomes necessary not only to drain, but to irrigate the bladder for more or less lengthened periods.

For such cases Keyes ("Annals of Surgery," 1888) recommends a small opening to be made in the perinæum, through which a No. 30 (French elastic) catheter is drawn by means of a probe, to which is attached a strong silk thread, which has been passed through the point of the catheter, as in Fig. 14, a knot being left within the catheter.

Fig. 14



The most usual method of draining and irrigating is by Perier's double suprapubic tube. This is the appliance which Guyon advocates for all cases. The curve which is necessary to make this appliance fit easily over the pubes is a permanent one. Ordinary elastic tubes are very unmanageable, but the double tube, oval on section, described by Guiard, answers admirably when drainage and irrigation are indicated.

TABLE I.—Showing the Mean Temperature in Dublin City, and the Deaths from All and from Certain Specified Causes in the Dublin Registration District, during the last Four and first Seven Weeks of the Year, in 1889-90, and on the Average.

No. of Week	Mean Temperature		Deaths from All Causes		Deaths from Zymotics		Deaths from Bronchitis		Deaths from Pneumonia		Deaths from Influenza		Deaths from Circulatory Diseases	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	1889-90	1861-80	1889-90	1879-88	1889-90	1879-88	1889-90	1879-88	1889-90	1879-88	1889-90	1879-88	1889-90	1879-88
49	41.7	41.7	188	207.8	28	26.4	31	35.3	7	8.4	0	0.3	9	11.1
50	41.8	41.5	218	217.0	18	28.5	39	40.5	10	8.2	11	0.0	17	12.6
51	44.7	41.3	229	218.6	21	27.5	36	39.1	11	6.3	0	0.0	14	12.8
52	46.2	41.2	166	223.5	17	29.3	25	40.4	11	10.0	0	0.0	3	13.1
1	42.8	41.0	236	219.2	23	27.8	52	40.4	15	8.8	0	0.0	14	14.4
2	48.4	40.9	299	220.0	29	31.6	66	39.1	29	8.9	4	0.0	21	12.7
3	48.6	40.7	325	218.4	38	29.5	87	41.1	30	7.6	13	0.1	23	14.1
4	41.3	40.8	330	229.8	37	30.1	85	48.1	32	9.1	8	0.1	30	12.2
5	43.2	41.1	294	230.1	29	29.5	64	43.5	21	9.8	6	0.0	18	12.7
6	41.0	41.3	225	227.6	22	28.0	36	41.9	13	7.6	7	0.1	14	12.8
7	38.4	42.0	250	223.3	24	26.7	52	41.0	14	10.7	7	0.1	13	11.4

Column 1 gives the weekly mean temperatures of the epidemic period of 1889-90; column 2 gives the average weekly mean temperatures in the corresponding periods of the 20 years, 1861-80. It will be observed that, while the mean temperature of the first two weeks of the period was about equal to the average, a remarkable excess of temperature afterwards set in, lasting for at least five weeks, and culminating in the second and third weeks of the new year, the mean temperatures of which were no less than 7.5° and 7.9° respectively above the average. Now, if one fact has been established in relation to the winter death-rate in Dublin, it is that the deaths from all causes, and, particularly, from disease of the respiratory organs, such as bronchitis and pneumonia, vary in number inversely with the temperature. If the thermometer is high in winter the death-rate is moderate or low; if the thermometer is low, the death-rate is high.

This appears very clearly from Table II., in which I have given figures for the first six weeks of a very cold year, 1881; for the corresponding period in a very warm year, 1884; and for the corresponding period of an average of 10 years. The mean temperature of the first six weeks of 1881 was as much as 5.4° *below* the average (41.0°). The mean weekly number of deaths from all causes in that period were 40.1 *above* the average— 264.3 compared with 224.2 . The mean deaths from diseases of the respiratory organs were 29.1 *above* the average— 87.8 compared with 58.7 . The mean weekly deaths from bronchitis were 69.2 , compared with a ten years' average of 42.4 , while the mean weekly deaths from pneumonia were 9.2 compared with an average of 8.6 . Who can hesitate to conclude from these figures that severe cold at the beginning of 1881 raised the death-rate from all causes, but more especially that from respiratory diseases, and among these notably bronchitis, and to a less extent pneumonia?

Now, take the converse. In the year 1884, the mean temperature of the first six weeks was 45.1° , or 4.1° *above* the average. The mean weekly number of deaths in that period were 37.2 *below* the average— 187.0 compared with 224.2 . The mean deaths from respiratory diseases were 19.2 *below* the average— 39.5 against 58.7 . The mean weekly deaths from bronchitis fell to 27.8 compared with an average of 42.4 ; those from pneumonia fell to 5.2 compared with 8.6 . Is it not equally clear from these figures that mild weather in January, 1884, lowered the death-rate from all causes, and from diseases of the breathing organs among the rest?

Heretofore it was customary to lay the tubes in the lower angle of the abdominal wound; but most surgeons are now agreed that it is best to close the vesico-pubic cellular interval by sutures carefully applied and drain through the middle of the wound (Englebach, Rollin, *Annales des Mal. des Organes Gen.-Urin.*, 1887).

STATISTICS.

I have avoided introducing the statistics of this operation; for, without an exhaustive analysis of numbers of cases (especially those instances where individuals record large personal experience of the procedure), it is absolutely useless to lay down rules as to the cases in which this operation should or should not be done. This will become apparent when one endeavours to make a communication more than a mere synthetical corner-stone on which to raise a monument in advocacy of the revived operation. When we recollect the unfortunate but natural tendency to publish successful cases, and to withhold fatal ones, we must recognise the difficulty of determining from figures alone the real position of this operation.

Nevertheless, a careful study of the course and history of the cases operated on during the last decennium, a full and unbiassed hearing of the two sides of the question, as debated in the councils of the surgical world, will go far to place on a firm basis an operation which asepsis in surgery has raised from the limbo to which the less elegant and less trusty methods of our forefathers consigned it.

ART. XIII.—*The Influenza Epidemic of 1889–90, as observed in Dublin.** By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the King and Queen's College of Physicians in Ireland; Physician to the Meath Hospital, Dublin; Joint Professor of Practice of Medicine in the Schools of Surgery of the Royal College of Surgeons in Ireland; Consulting Physician to the Whitworth Hospital, Drumcondra; ex-Scholar and Diplomate in State Medicine of Trinity College, Dublin.

My observations on the epidemic of influenza of 1889–90, in Dublin, extend over a period of nearly three months—from early in last December up to the end of February. The two earliest cases which

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, February 28, 1890. [For the discussion on this paper see page 362.]

came under my notice dated from Thursday and Friday, December 5 and 6, 1889, respectively. The outbreak was at its height in the first half of January. Towards the close of that month its prevalence waned quickly; but in the middle of February there was a recrudescence of the epidemic.

In this communication I propose—first, to consider the effect produced on the public health and on the bills of mortality in Dublin by the epidemic; and, secondly, to describe the impression made upon me as to the origin, nature, and course of the disease.

PART I.—STATISTICAL.

In considering the effect of the influenza on the public health we are, unfortunately, at a serious disadvantage in having no system of registration of disease. But I take it that few will be found to deny that sickness in Dublin increased by leaps and bounds in the closing days of December, 1889, and that the following January was one of the sickliest ever experienced within living memory. The whole “Epidemic Constitution”—to use Sydenham’s classical phrase—was changed for the worse; the power of resisting disease was lessened; and extreme langour and prostration passed over the population like a pandemic, as Inspector-General Robert Lawson would say.

As to the influence of the late epidemic on the death-rate of Dublin, we have more direct and precise information in the Registrar-General’s weekly returns of births and deaths in Dublin and its suburbs. We may, indeed, admit as self-evident that existing statistics of the “Medical Cause of Death” are far from perfect, having regard to the frequency of a wrong diagnosis, the confusion between “primary” and “secondary” causes of death, and the absence, in the vast majority of cases, of the corroborative evidence or otherwise, which a *post mortem* examination, conducted by an expert, would afford. Nevertheless, such statistics have a certain value, more especially when we compare the returns of one period with those of another and corresponding period, or with average figures deduced from observations extending over a long series of years.

In Table I. I have included some very interesting and instructive facts bearing upon the epidemic of influenza in the Dublin Registration District, embracing a population (estimated to the middle of 1890) of 353,082 souls.

TABLE I.—Showing the Mean Temperature in Dublin City, and the Deaths from All and from Certain Specified Causes in the Dublin Registration District, during the last Four and first Seven Weeks of the Year, in 1889–90, and on the Average.

No. of Week	Mean Temperature			Deaths from All Causes			Deaths from Zymotics		Deaths from Bronchitis		Deaths from Pneumonia		Deaths from Influenza		Deaths from Circulatory Diseases	
	1	2		3	4		5	6	7	8	9	10	11	12	13	14
	1889-90	1861-80		1889-90	1879-88		1889-90	1879-88	1889-90	1879-88	1889-90	1879-88	1889-90	1879-88	1889-90	1879-88
49	41.7	41.7	°	188	207.8		28	26.4	31	35.3	7	8.4	0	0.3	9	11.1
50	41.8	41.5		218	217.0		18	28.6	39	40.5	10	8.2	11	0.0	17	12.6
51	44.7	41.3		229	218.6		21	27.5	36	39.1	11	6.3	0	0.0	14	12.8
52	46.2	41.2		166	223.5		17	29.3	25	40.4	11	10.0	0	0.0	3	13.1
1	42.8	41.0		236	219.2		23	27.8	52	40.4	15	8.8	0	0.0	14	14.4
2	48.4	40.9		299	220.0		29	31.6	66	39.1	29	8.9	4	0.0	21	12.7
3	48.6	40.7		325	218.4		38	29.5	87	41.1	30	7.6	13	0.1	23	14.1
4	41.3	40.8		330	229.8		37	30.1	85	48.1	32	9.1	8	0.1	30	12.2
5	43.2	41.1		294	230.1		29	29.5	64	43.5	21	9.8	6	0.0	18	12.7
6	41.0	41.3		226	227.6		22	28.0	36	41.9	13	7.6	7	0.1	14	12.8
7	38.4	42.0		256	223.3		24	26.7	52	41.0	14	10.7	7	0.1	13	11.4

Column 1 gives the weekly mean temperatures of the epidemic period of 1889-90; column 2 gives the average weekly mean temperatures in the corresponding periods of the 20 years, 1861-80. It will be observed that, while the mean temperature of the first two weeks of the period was about equal to the average, a remarkable excess of temperature afterwards set in, lasting for at least five weeks, and culminating in the second and third weeks of the new year, the mean temperatures of which were no less than 7.5° and 7.9° respectively above the average. Now, if one fact has been established in relation to the winter death-rate in Dublin, it is that the deaths from all causes, and, particularly, from disease of the respiratory organs, such as bronchitis and pneumonia, vary in number inversely with the temperature. If the thermometer is high in winter the death-rate is moderate or low; if the thermometer is low, the death-rate is high.

This appears very clearly from Table II., in which I have given figures for the first six weeks of a very cold year, 1881; for the corresponding period in a very warm year, 1884; and for the corresponding period of an average of 10 years. The mean temperature of the first six weeks of 1881 was as much as 5.4° *below* the average (41.0°). The mean weekly number of deaths from all causes in that period were 40.1 *above* the average— 264.3 compared with 224.2 . The mean deaths from diseases of the respiratory organs were 29.1 *above* the average— 87.8 compared with 58.7 . The mean weekly deaths from bronchitis were 69.2 , compared with a ten years' average of 42.4 , while the mean weekly deaths from pneumonia were 9.2 compared with an average of 8.6 . Who can hesitate to conclude from these figures that severe cold at the beginning of 1881 raised the death-rate from all causes, but more especially that from respiratory diseases, and among these notably bronchitis, and to a less extent pneumonia?

Now, take the converse. In the year 1884, the mean temperature of the first six weeks was 45.1° , or 4.1° *above* the average. The mean weekly number of deaths in that period were 37.2 *below* the average— 187.0 compared with 224.2 . The mean deaths from respiratory diseases were 19.2 *below* the average— 39.5 against 58.7 . The mean weekly deaths from bronchitis fell to 27.8 compared with an average of 42.4 ; those from pneumonia fell to 5.2 compared with 8.6 . Is it not equally clear from these figures that mild weather in January, 1884, lowered the death-rate from all causes, and from diseases of the breathing organs among the rest?

TABLE II.—*Showing the Influence of Temperature and of Influenza respectively on the Mortality from All Causes, and from Diseases of the Respiratory and Circulatory Organs in particular.*

PERIODS	Deaths from All Causes	Deaths from Respiratory Diseases	Deaths from Bronchitis	Deaths from Pneumonia	Deaths from Heart Disease	Mean Temperature
AVERAGE OF TEN YEARS, 1880-89.						
1st week - -	219.2	55.3	40.4	8.8	14.4	41.0
2nd week - -	220.0	54.3	39.1	8.9	12.7	40.9
3rd week - -	218.4	56.4	41.1	7.6	14.1	40.7
4th week - -	229.8	66.6	48.1	9.1	12.2	40.6
5th week - -	230.1	62.0	43.6	9.8	12.7	41.1
6th week - -	227.6	58.7	41.9	7.6	12.8	41.3
Means -	224.2	58.7	42.4	8.6	13.2	41.0
COLD YEAR, 1881.						
1st week - -	203	47	35	5	14	41.3
2nd week - -	224	70	51	12	10	28.5
3rd week - -	292	91	74	6	20	27.3
4th week - -	303	117	93	12	11	32.9
5th week - -	297	111	86	13	18	42.2
6th week - -	267	91	77	7	11	41.5
Means -	264.3	87.8	69.2	9.2	14.0	35.6
WARM YEAR, 1884.						
1st week - -	193	41	29	6	17	44.2
2nd week - -	182	38	23	8	13	46.4
3rd week - -	180	39	31	5	13	46.9
4th week - -	166	43	32	3	6	45.1
5th week - -	200	39	28	5	13	41.3
6th week - -	202	37	24	4	14	46.0
Means -	187.0	39.5	27.8	5.2	12.7	45.1
INFLUENZA YEAR, 1890.						
1st week - -	236	75	52	15	14	42.8
2nd week - -	299	112	66	29	21	45.4
3rd week - -	325	130	87	30	23	45.6
4th week - -	330	130	85	32	30	41.3
5th week - -	294	89	64	21	18	43.3
6th week - -	226	56	36	13	14	41.0
Means -	285.0	98.7	65.0	23.3	20.0	44.2

And now we come to the opening six weeks of 1890, when the mean temperature shows an excess comparable with that of 1884—it was 44.2° , or 3.2° above the average, and only 0.9° below the value for 1884. Under these circumstances, a low rate of mortality from all causes, and especially from respiratory diseases, was to have been looked for. But how different were the facts! The mean weekly number of deaths were 60.8 *above* the average— 285.0 against 224.2 . The mean deaths from respiratory diseases were 40.0 *above* the average— 98.7 against 58.7 . The mean weekly deaths from bronchitis were 65.0 , compared with the average, 42.4 ; while the mean weekly deaths from pneumonia were 23.3 compared with an average of 8.6 .

It is of interest to observe that, whereas the deaths referred to bronchitis were only 53 per cent. in excess of the average, those referred to pneumonia were no less than 171 per cent. in excess. Bearing this result in mind, we have a clue to the prime cause of the heightened death-rate in 1890, which was manifestly the epidemic of influenza. At a meeting of the Imperial Royal Society of Physicians of Vienna, on January 31, 1890, Professor Weichselbaum* read a paper on Influenza, embodying the results of his investigations into the condition of the blood and catarrhal secretions of the respiratory mucous membranes of patients suffering from the disease, as well as the morbid products found *post-mortem*. In most of the cases the presence of the diplococcus-pneumoniæ was proved, microscopically as well as by cultures—at least, a capsulated diplococcus was discovered, differing very little from the micrococcus of pneumonia. From his investigations Professor Weichselbaum inclines to the opinion that the influenza was produced by other unknown organisms, the presence of the pneumococcus being due to a secondary infection. The view that only a favourable soil for the development of the pneumococci was created by the influenza is supported by the fact that these micro-organisms were also found in healthy persons. We now see why pneumonia is such a frequent complication, or sequela, of influenza; and further, how it was that pneumonia showed such a marked prevalence and fatality, as compared with bronchitis, in Dublin during the ever-memorable month of January, 1890.

During the eleven weeks included in Table I. only 45 deaths were registered as having been directly due to influenza. Of these, the first was registered so far back as the week ending Saturday,

* Cf. *Brit. Med. Journal*, Feb. 8, 1890. Page 322.

December 14, 1889. The victim was an infant under one month old, who lived and died in No. 4 South City (Grand Canal-street), Registration District. I cannot help regarding the influenzal theory of the cause of this infant's death as doubtful; it was not until the second week of the New Year that other deaths from influenza were registered in the Dublin District. In that week the deaths directly referred to the epidemic were 4 in number—the victims were an infant under one year, two persons aged between 40 and 60, and one octogenarian. One of the deaths occurred in No. 1 North City District West, two in the Rathmines District, and one in the Donnybrook District.

In the third week of 1890, 13 deaths were attributed to influenza—2 patients being aged between 5 and 20 years, 3 between 20 and 40, 5 between 40 and 60, and 3 between 60 and 80. Four of the deaths took place in No. 1 North City District West (Langrishe-place); two in No. 3 North City District (Benburb-street); one each in Nos. 1 and 3 South City Districts, Clontarf and Howth, No. 1, Rathmines, Donnybrook, and Blackrock.

In the fourth week, the deaths were 8—3 being of persons aged 20 and under 40, 4 between 40 and 60 years, and one of a person aged 60 and under 80. The geographical distribution of the casualties was—3 in No. 1 North City District West (Langrishe-place), 1 in No. 3 North City District, 1 in No. 1 South City District, 2 in No. 4 South City District, and 1 in Kingstown.

In the fifth week, the deaths were 6—at ages 5 and under 20 (1 case), 20 and under 40 (1), 40 and under 60 (1), 60 and under 80 (2 cases), upwards of 80 (1 case). The 6 deaths were distributed thus—1 in No. 3 North City District, 2 in No. 4 South City District, 2 in Donnybrook, and 1 in Kingstown.

In the sixth week, the deaths were 7—1 between 20 and 40 years of age, 2 between 40 and 60, 3 between 60 and 80, and one upwards of 80. Two of the 7 deaths occurred in Langrishe-place District (No. 1 North City West), one in Lisburn-street (No. 2 North City), 2 in Grand Canal-street (No. 4 South City), and 1 each in Finglas and Glasnevin, and in Donnybrook.

In the seventh week, 7 deaths were registered as due to influenza—1 between 1 and 5 years of age, 1 between 20 and 40, 2 between 40 and 60, and 3 between 60 and 80. One death from influenza occurred in each of the following districts—No. 1 North City West, No. 2 North City, No. 1 South City, No. 3 South City, No. 4 South City, Donnybrook and Kingstown.

I do not think that much importance is to be attached to the fact that, while 11 deaths were registered as due to influenza in No. 1 North City District West (Langrishe-place), only two such deaths were registered in the neighbouring district—No. 2 North City; or, similarly, that, while 7 deaths from influenza were registered in No. 4 South City District, only two such deaths were registered in No. 3 South City District. I have compared the death-rate from diseases of the respiratory organs in these several districts during the first seven weeks of 1890, and find that it is about the same in all four districts—allowance being made for differences of population. It would really seem as if in some districts influenza, and in others bronchitis or pneumonia, had been given the more prominent place as the immediate cause of death. There can be no question, I think, that in many cases returned as deaths from bronchitis or pneumonia, influenza was the “primary cause”—to use the language of the medical certificate of the cause of death.

One interesting fact does, however, stand out in relief from the statistics given—namely, that influenza spread as early and as quickly through the suburbs as it did through the crowded streets and alleys of the city. This is in marked contrast to the behaviour of such infective diseases as typhus, small-pox, scarlatina, and measles, and may fairly be used as an argument in favour of the *pandemic*, as distinguished from the *epidemic*, spread of influenza.

Another point connected with the statistics of the epidemic, to which I would draw attention, is the influence it exercised over the deaths from affections of the circulatory system, and in particular of the heart.

In Tables I. and II. are included columns which contain the facts relative to the deaths from circulatory diseases, such as aneurysm, pericarditis, and “heart disease” in the most general sense. If we compare columns 13 and 14 of Table I., we are struck by the marked rise in the number of deaths coincident with the chief epidemic period—the 2nd, 3rd, and 4th weeks of 1890. In the fourth week, diseases of the circulation were returned as the cause of death in 30 instances, compared with a ten-years’ average of 12·2 deaths for the corresponding week. Of the 20 victims, 14 were aged between 40 and 60 years, 9 between 60 and 80, and 4 were above 80 years.

Turning to Table II. we see that even intense cold in winter does not materially affect the death-toll from diseases of the circulatory system—the mean weekly fatalities in the first six weeks of

1881—the cold season—being 14·0 compared with an average of 13·2. Again, warmth in winter does not seem to lessen the mortality from this class of maladies, for the weekly mean deaths were 12·7 compared with the average 13·2.

In the influenza year, it is quite the reverse. The mean weekly number of deaths rises to 20·0 from an average of 13·2 in ten years.

One of the most interesting inquiries connected with the epidemic is the influence of age on the mortality from the malady itself, and from its complications and sequelæ. This is too large a question to discuss in the present paper. Suffice it to say that the influenza did not appreciably raise the death-rate among young children, while it was fatal to adolescents and adults in the prime of life, as well as after the age of fifty years. This will be clear from the following comparison of the deaths at certain periods of life in the last four weeks of 1889, and the first four weeks of 1890:—

TABLE III.—*Showing the Total Number of Deaths at Different Ages in the last Four Weeks of 1889 and the first Four Weeks of 1890, respectively.*

—	1889, Deaths	1890, Deaths	Percentage Increase
Under 5 years . . .	242	236	—
From 5 to 20 years . . .	61	88	44
From 20 to 40 years . . .	127	236	86
From 40 to 60 years . . .	168	304	81
From 60 to 80 years . . .	165	278	68
80 years and upwards . . .	38	48	26

From this table it will be seen that the fatal January of 1890 slew fewer children under five years of age than the colder December of 1889 had slain.

From the foregoing considerations we may conclude that—

1. The epidemic of influenza was more pernicious to the population of Dublin than the extreme cold of January, 1881.
2. It slew its victims, not so much directly, as by means of complications and sequelæ, affecting the breathing organs and the heart.

3. It spared the lives of children of tender years, but killed large numbers of adults and those advanced in life.
4. Its effect upon the death-rate was sudden and pronounced, and lasted for at least seven weeks, or throughout the month of January and first half of February.

PART II.—CLINICAL.

It would be impossible, within the limits of this paper, to give the clinical histories of all the cases of influenza, amounting to about 100, which came under my immediate observation in hospital and private practice. Nor, indeed, have I materials at hand to do so, even did time and space permit. At one period—about the 10th of January—between forty and fifty new cases were daily prescribed for in the out-patient department of the Meath Hospital. And at the same time, several cases of influenzal secondary pneumonia and bronchitis came under treatment at my hands in the hospital wards.

The earliest cases of which I had cognizance occurred on the 5th and 6th of December respectively. One of these two patients consulted me on Monday, December 9th, having been ill from Thursday, the 5th. He was a clergyman, aged fifty-two, in whose case the prominent symptoms were headache, tender eyes, palpitation, insomnia, and loss of strength. The other patient was a young lady, aged nineteen, who was suddenly attacked with shivering, headache, and high temperature, with very rapid pulse, on Friday, December 6. The fever lasted a few days, and then gave way, to be followed by a second rigor on Friday, December 20, and urgent chest symptoms. On visiting her with Dr. Usher, of Dundrum, on the 22nd, her pulse was 124, respirations were 36, and the temperature 102.7° at 3 p.m. The left base was solid. Great dyspnoea, tubular breathing, and marked bronchophony were present. She was bringing up an abundant muco-purulent sputum—like that of bronchiolitis rather than acute lobar pneumonia. It was examined by Dr. Bewley, who reported that no tubercle-bacilli were present, but that various putrefactive microbes were found. On December 26 her pulse was 120, respirations had risen to 48, and the temperature at noon was 101.6° . Dr. James Little saw her with Dr. Usher and me next day, when we found a new patch of pneumonic consolidation in the middle of the right back, and there were a few rusty-tinged sputa. From this time she steadily recovered, and went to Bournemouth with

her father on January 23rd, 1890, "pretty nearly all right," as he expressed it in a letter to me.

I propose now to give a brief clinical sketch of four cases—each illustrating a type observed in the epidemic.

CASE I.—*The Nervous, Neuralgic, or Rheumatoid Type.*—One of the earliest cases which I saw was that of a lady, who was seized on the evening of Friday, December 20, 1889, and who was seen next morning by my friend, Dr. James Craig, one of the Assistant Physicians to the Meath Hospital. The following is this lady's own account of her attack:—"Friday, Dec. 20th, 1889, I went to the oratorio at St. Patrick's Cathedral apparently in my usual health. Shortly after entering the Cathedral I felt chilled, as if cold water was being poured down my back and legs. When I returned home I warmed myself at a good fire, was given some hot wine and water, and went to bed; then my face and head got very hot and uncomfortable, and pains began in my arms, shoulders, and legs. All night the pains were very bad, sometimes so sharp across the back of my chest that I could have cried out; and, although I felt burning to touch, the cold-water sensation continued. I got no sleep that night. Next day, about twelve o'clock (mid-day), I was given a powder (salicylate of sodium) and in two hours afterwards another, which put me into a perspiration. The pains in my limbs got better, but my head began to ache badly and all day I felt very ill. I suffered from great thirst. Saturday night slept better. Sunday morning about 5 a.m. I wished for a cup of tea, but could not taste it. I might have been drinking hot water. Sunday evening pains had quite gone. I had no headache. I got up for a while, but felt very weak. For several days I had no energy for anything, the least exertion tired me. My sense of taste did not return for four or five days. I also got a cough which was very troublesome. Temperature—Friday night 101°; Saturday morning 100°, evening 98·8."

CASE II.—*The Cardio-pulmonary Type.*—On Monday, December 30th, 1889, Mrs. W., a lady, aged fifty-four years, somewhat frail and delicate, while out walking was seized with shivering and violent headache, and intense pain in the back and in the "bones." On reaching home she at once went to bed, feeling very ill and prostrate. Next day I visited her. The tongue was thickly furred and dry. Her pulse was 132, respirations 28, temperature 103·3°. Having regard to the sudden onset of the illness and the symptoms, I pronounced the attack to be one of influenza.

On New Year's Day (third day) the pulse was 110, respiration 28, temperature 102·0°. The tongue thickly coated; eyes tender and lachrymation; complete anorexia; great prostration.

January 2, 1890 (fourth day).—The report was that she had a better

night. Herpes was showing round the nostrils. Pulse 96–100; respiration, 28; temperature, 102·4°. Severe stabbing or catching pain was complained of at the lower part of the left side of the chest. No physical signs could be detected, and a hot poultice relieved the pain.

January 3 (fifth day).—Pulse, 110; respiration, 32; temperature, 102·7°. A lymphic crepitation was now audible over the upper part of the left side of the chest, and on deep inspiration a fine pneumonic crepitation could be heard.

January 4 (sixth day).—Pulse, 110; respiration, 40; temperature, 103·2°. Dulness now existed, which was rapidly extending all over the left apex, where also a marked *frottement* could easily be recognised. At 6 p.m. Dr. Watson Pike, A.M.S., saw the patient with me and agreed in my diagnosis of influenza complicated with a left pleuro-pneumonia. Pulse, 112; respiration, 42; temperature, 102·7°. There was not a trace of expectoration, and scarcely any cough occurred. We considered the patient to be in danger, and continued the treatment, which consisted in free stimulation, frequent feeding, and quinine.

At 1 30 a.m. of Sunday, January 5, I was summoned to see the patient, and found her sinking fast. Dr. Hearn, of Rathmines, kindly joined me in consultation. Her pulse was failing, and the temperature was 103·3°. She rallied for a time, but at 6 a.m. another attack of cardiac failure came on. From this also she rallied, but at 10 a.m. she suddenly died.

As bearing on the diagnosis of this case, it is to be noticed that four—if not five—of the other members of this lady's family suffered from influenza either immediately before or after her illness.

Appended is the clinical chart. [See Plate I., Chart I.]

CASE III.—*The Gastric Type*.—On Wednesday, January 8, 1890, Mr. W. B. S. enjoyed a day's shooting in the Co. Wicklow. The following day he returned to town in his usual good health; but in the afternoon felt chilly, complained of headache and nausea, and felt utterly miserable. He went to bed early, but passed a wretched night—restless and sleepless. Next morning I found him complaining of pains in the eyeballs, back of the head, and small of the back. Pulse, 84; temperature, 99·9°; tongue thickly coated; complete loss of appetite and nausea. He felt entirely prostrate, and, at my evening visit, expressed his belief that some fish which he had eaten for dinner had thoroughly disagreed with him. Two miserable days of sickness followed, the temperature rising on the morning of the 5th day to 103·1°. A short cough had set in, and the eyes were suffused and tender. There was constipation, and he complained of weight and fulness in the pit of the stomach. Dr.

James Little saw him with me and thought it likely that the fever would run on for some time. A quiet day gave promise of a restful night, and this promise was abundantly fulfilled. He had an excellent night, partly due to 20 grains of antipyrin, with 20 minims of tincture of gelsemium in a draught in divided doses at bedtime. Next morning, pulse 76; temperature 98.7° , rising to 100.2° in the evening, but without any return of restlessness. Subnormal temperatures followed for a few days— 96.4° being one observation. The tongue cleaned very slowly, and several days of extreme languor and weakness preceded final convalescence.

This gentleman's wife had, a few days previously, suffered from influenza, from which she was recovering when he fell ill. She nursed him and got a relapse, accompanied with cough, bronchial catarrh and absolute loss of appetite. It is right to mention that Mr. S. had been subject to occasional "bilious attacks," as he described them. Except for these he had not known a day's sickness from his boyhood, and did not recollect when he had been obliged to keep his bed even for a day. [See Plate I., Chart II.]

CASE IV.—The Febrile Type.—On New Year's Eve I received a note from a surgical colleague asking me to see him as he had been taken ill the same afternoon while in his study. On visiting him in bed, he was still shivering at times, and complaining of a distressing feeling of cold water streaming down his back. He stated that he had been out of sorts for three or four weeks, and it was quite evident that he had made up his mind that the attack was one of typhoid fever. His pulse was 92, the temperature about 100° . His tongue was very furred, and his eyes were injected with swollen lids. He had lost the senses of taste and smell, and complained much of rheumatoid or neuralgic pains in the back and limbs. Two restless feverish nights followed. So I asked our mutual friend, Dr. Gordon, to see him with me. At the end of the examination, the patient said to Dr. Gordon—"Our friend Moore says I have influenza; do you think I have?" The answer was—"I do not think it, but I am sure of it." [See Plate I., Chart III.]

There was in this case steady pyrexia for four days, and then came profuse sweatings, lasting for several days. A slight elevation of temperature occurred on the evening of the seventh day, after which convalescence went on uninterruptedly. The weakness was for a time extreme.

This febrile type prevailed especially among children. The three charts, included in Plate II. and numbered IV., V., VI., show the febrile movement in girls, aged from 12 to 15. The marked



Plate I

EXAMPLES OF TEMPERATURE RANGES IN INFLUENZA OBSERVED IN DUBLIN.

CHART I.—Mrs. W., aged 54.

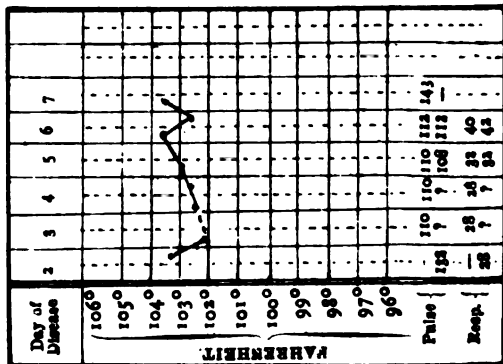


CHART II.—W. B. S.

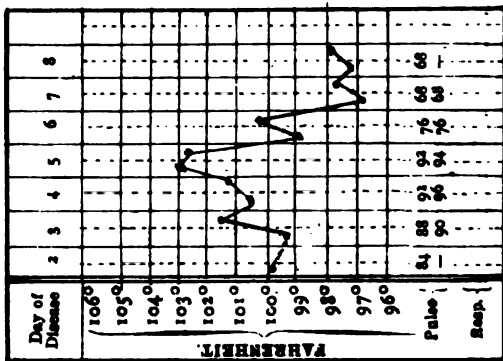
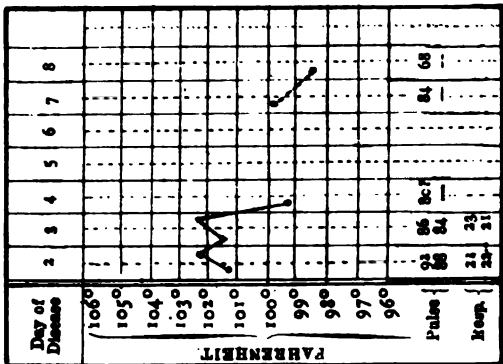


CHART III.—W. S.



EXAMPLES OF TEMPERATURE RANGES IN INFLUENZA OBSERVED IN DUBLIN.

CHART IV.—Elsie M.

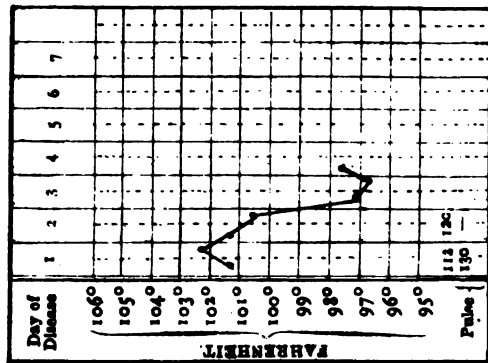


CHART V.—Dorothy O.

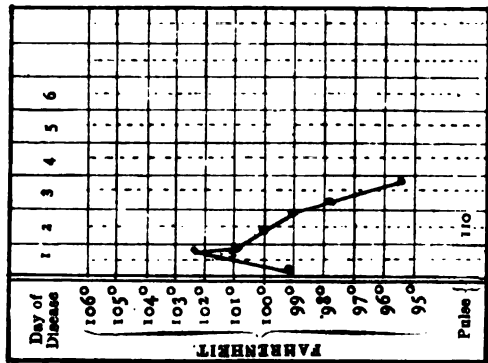
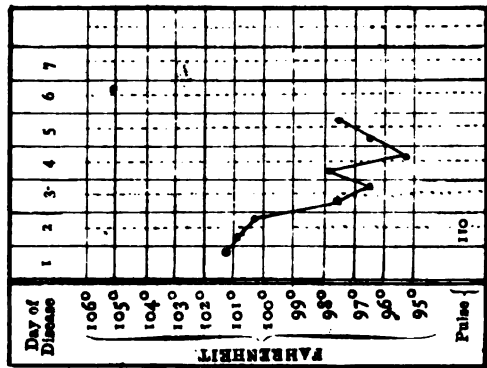


CHART VI.—Fanny C.



subnormal temperatures on the third and following days are very noteworthy, and are so constantly present in the defervescing stage of influenza as to become an important diagnostic sign.

The lessons which personally I have learned from the epidemic may be stated in the form of propositions, as follows:—

1. Influenza is an acute specific infective disease of the miasmatic, rather than the miasmatic-contagious class. Its virus or contagium, when once introduced into the body, acts primarily and quickly on the nervous system, producing the phenomena of an acute pyrexia, with singularly rapid pulse. Unlike the poison of typhus, the virus of influenza is not rendered inert by oxidation from contact with atmospherical air, but rather the contrary.

2. The disease appears to be *pandemic*, rather than *epidemic*, affecting multitudes at one and the same moment, both by sea and land—a known fact, which suggested to Dr. Hilton Fagge (who, however, does not adopt the miasmatic theory of the origin of influenza) the view that the organisms which give rise to influenza, if organisms there be, cannot undergo multiplication and development anywhere except in the air itself. The virus of influenza is then a miasma, or what the physicians of the sixteenth and seventeenth centuries called a “fouling of the air.”^a In this connection, Hirsch, of Berlin, points out that influenza has not spread more quickly in our own times, with their multiplied and perfected ways and means of communication, than in former decades or centuries.^b The prevalence of the disease is absolutely independent of season and weather—a fact which distinguishes influenza from epidemic bronchial catarrh.^c “Et tempore frigidiori et calidiori, et flante tam Austro quam Borea, et pluvioso et sereno cœlo, peragravit hasce omnes Europæ regiones, et omnia loca indiscriminatim.”^d

3. If this miasmatic or pandemic view of the origin of influenza is correct, there is no need to seek for a period of incubation, the virus being already “hatched” at the time of its reception into the human system—that is, at the time of infection. In several, if not in most, cases, there is an interval between the reception

^a Hirsch. Handbook of Geographical and Historical Pathology. Vol. I., p. 34. New Syd. Soc. 1883.

^b Loc. cit. P. 36.

^c Cf. Hirsch. Loc. cit. P. 26.

^d Petrus Salinus Diversus, cited by Dunning (Med. and Phys. Journal. Vol. X., p. 43), and quoted by Dr. Thomas Hancock in an excellent article on Influenza in the second volume of the Cyclopædia of Practical Medicine, published in 1833.

of the poison and the development of the symptoms. The most common duration of this interval seems to be one or two days. But this pseudo-incubation period may be explained on the supposition that in certain individuals an intact condition of the mucous membranes may present an obstacle to the entrance of the virus into the blood, and so delay the development of the disease. It is reasonable to suppose also that—whether we admit the doctrine of *phago-cytosis* to be true, or not—the resisting power of some individuals may postpone an attack for even two or more days.

Of course, it is not denied that the morbid agent or virus is capable of adhering to the human body, or to clothes, or luggage, or letters, so as to be conveyed from one place to another (Hilton Fagge). “But,” adds that writer, “its subsequent growth and development is, doubtless, altogether independent of this kind of assistance.”

I have observed several cases of apparent communication of the disease from person to person, but without being able to calculate the duration of a supposed period of incubation. In one such case, a lady visited a friend ill of influenza at 2 p.m., and was, three hours later, attacked with symptoms of the disease—chills, weakness, coryza, lacrymation, stuffing of the nostrils, and loss of smell and of taste. Here, doubtless, the virus clung to the person of the first patient, and was received fully developed into the system of the second, producing its toxic effects almost at once.

Several writers advance the view that influenza is both a pandemic—or miasmatic, and an epidemic—or miasmatic-contagious disease. Thus, Dr. P. Duflocq, Chef de Clinique in the Faculty of Medicine in Paris, concludes an elaborate article* on the clinical varieties of influenza observed in that city in December, 1889, and January, 1890, with these words:—

“La grippe semble donc être une maladie à la fois épidémique et contagieuse, et la période d’incubation serait de deux jours.”

4. Very young children seem to enjoy a certain immunity from influenza, or to have the disease in a mild form—that of an ephemeral fever, followed by profuse sweating, and, after a few days, a tendency to slight catarrh. In 1847 Dr. Fleetwood Churchill communicated to the *Dublin Journal of Medical Science*^b observations he had made on the epidemic influenza observed in January

* Des Variétés cliniques de la Grippe à Paris en Décembre 1889 et Janvier 1890. Revue de Médecine. Tome X. Page 85. Février, 1890.

^b Vol. III. May, 1847. Page 373.

and February of that year among children in Dublin. In upwards of 60 cases, embracing children of all ages, from two months old to twelve or fourteen years, he had not a single death; so that he was led to conclude that, among children, although the epidemic was very general and severe, yet the danger was not very great, when the disease was properly handled.

In January, 1890, all my five children had influenza, their ages ranging from 13 to 4 years. The mildest cases were those of the eldest and youngest. A boy of seven and a-half years had incessant vomiting and nausea for 24 hours, and profuse sweating, with a pulse as fast as in scarlet fever—140 per minute. There was a bronchial catarrh in two of the cases. This "child-type" of the disease presented itself to my notice also in a large girls' school, of which I am one of the physicians.

5. Adults suffer severely in many cases, the symptoms being—chills, headache, often sleeplessness, sometimes delirium, pains in the eyeballs, nape of the neck, small of the back, knees, and along the margins of the ribs, loss of the special senses of smell, taste, and, sometimes, hearing; smarting of the eyes, photophobia, lacrymation, otalgia, complete loss of appetite, bad taste in the mouth, nausea, and, perhaps, vomiting; constipation, but, occasionally, diarrhoea; cough, frequent sweating, loss of strength, fainting. Of course, it is only a selection from these symptoms that is present in a given case.

6. Influenza, while infrequently directly fatal, causes an indirect loss of life which is appalling, chiefly through complications affecting the respiratory, and, in advanced life, the circulatory systems. It has been said that influenza, while relatively less fatal, is absolutely more fatal than cholera.*

I have seen fatal cases of influenzal bronchitis, pneumonia, pleuritis, and heart failure. The pneumonia, while producing the ordinary physical signs of acute croupous pneumonia, is often latent in its course, or accompanied by a profuse muco-purulent expectoration, with scarcely any rusty sputa. The ebbing of the strength in some of these cases in elderly people is something awful—it is often absolutely beyond control.

7. Influenza is a perilous complication of pulmonary consumption.

8. Other complications of which I have had experience are—Epistaxis (one case), facial neuralgia (several cases), profuse

* Cf. Sir Thomas Watson. *Practice of Physic*. Third Edition. Vol. II., page 46. 1848.

sweatings (several cases), skin-rashes (four cases—three were examples of papular sweat rashes, with sudamina; one was an erythema fugax), herpetic eruptions (several cases); cystitis, followed by mild orchitis (one case).

In contrast to Dengue Fever, I believe that influenza is a non-eruptive fever. When rashes do appear, they are accidental rather than essential, or specific, and they result from hyperpyrexia, or profuse sweating, or from the ingestion of such drugs as quinine, or antipyrin, or salicylate of sodium.

9. Influenza seems to have the property of picking out the weak point in an individual's constitution. If the patient is neurotic, nervous and neuralgic symptoms are likely. Any old tendency to catarrh of either the respiratory or the digestive mucous membranes is at once intensified in the presence or in the wake of this strange malady.

10. The febrile movement in even uncomplicated influenza is, as Wunderlich would say, "polytypical," or "atypical." This is shown by the charts already given, and, further, in a diagram containing three different types of temperature range in influenza (which I have had reproduced in Plate III.), illustrative of a paper by Dr. Otto Frentzel, Assistant Physician to the Municipal General Hospital at Friedrichshain, which appeared in the *Centralblatt für klinische Medicin*, for January 11, 1890.*

11. Influenza shows a marked tendency to relapse, and to this is largely due the indirect fatality of the malady. In the epidemic of 1847, the death-rate was estimated at 2 per cent. of the cases observed in London. It has certainly not been higher in the present epidemic. A fortnight, at least, elapsed last December between the occurrence of the earliest cases and fatalities from influenzal pneumonia and bronchitis.

12. The treatment of the affection turns upon common sense principles. It is expectant, palliative, and symptomatic. There is no specific for influenza; but the most useful drugs to employ in its treatment are—(1) Quinine, (2) antipyrin (except in young children and the weakly), (3) salicylate of sodium, especially in effervescence, (4) phenacetin, and (5) effervescing citrate of caffeine.

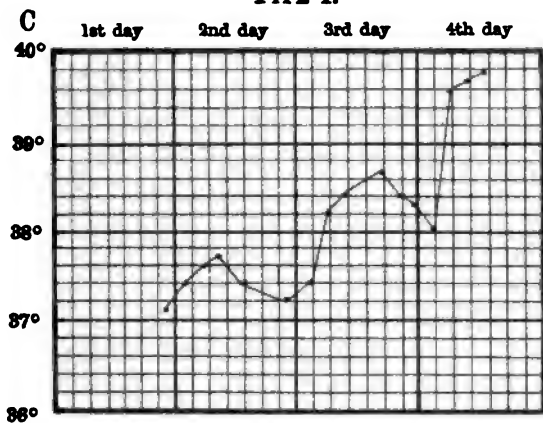
* Zur Kenntnis des Fieberganges bei Influenza.

Plate III

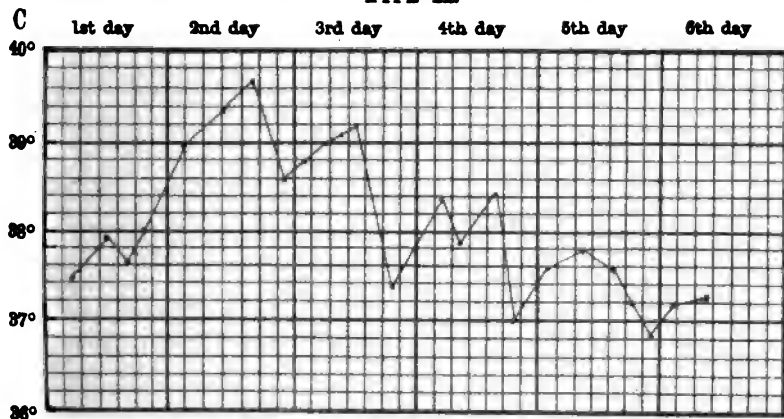
TYPES OF TEMPERATURE RANGES IN INFLUENZA.

(After Dr. Otto Prentzel, of Friedrichshain.)

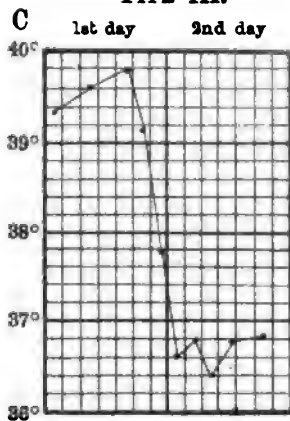
TYPE I.



TYPE II.



TYPE III.



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The History of the University of Dublin, from its Foundation to the End of the Eighteenth Century. With an Appendix of Original Documents which, for the most part, are preserved in the College. By JOHN WILLIAM STUBBS, D.D., Senior Fellow of Trinity College. Dublin: Hodges, Figgis & Co. London: Longmans, Green & Co. 1889. Demy 8vo. Pp. 430.

IN view of the near approach of the tercentenary of the great and venerable University of Dublin, this work must needs possess a more than ordinary interest for all who are concerned in the welfare of Ireland, and in the progress of university education in this country.

The volume, which is one of the well-known Dublin University Press series, is in reality part of a very important historical work, and has evidently received at the author's hands an amount of attention which cannot fail to make it a standard work of reference. We say advisedly that it is "part" of a work, for the history of the University during the nineteenth century remains to be written. In his preface the author himself says:—

"The history of Trinity College is brought down in the present work only to the beginning of the nineteenth century, because the foundation of the present greatness of the College had been at that time well established, while the details of the earlier College history were likely to be forgotten and lost. At the same time the enormous progress which learning of every kind has made in the College during the last sixty years, and the immense improvements which have been introduced into every department of the studies of the University during that period would well form the materials for a separate volume."

It is a matter for congratulation that the Rev. Dr. Stubbs has so well accomplished his task, or labour of love, so far as the volume before us is concerned; but we may be allowed to express the hope that another volume will soon be written by the same

hand, so that when the tercentenary celebration takes place in 1893, a complete history of this truly national University of Ireland may be available for distribution on so auspicious an occasion.

The first chapter gives an account of sundry attempts to found a university in Dublin prior to the foundation of Trinity College. One of these was, to a great extent, successful. In 1320 Alexander de Bicknor established a university in St. Patrick's Cathedral, which to the present day is called "The Collegiate and Cathedral Church of St. Patrick, Dublin." The foundation of this university was confirmed by the authority of Pope John XXII., and William Rodiart, Dean of St. Patrick's, was promoted to the degree of Doctor of the Canon Law, and made the first Chancellor.

It appears from the Registry of Archbishop Alan that Edward III. afterwards founded a Lectureship in Divinity in De Bicknor's University; and, from a contemporary document in Birmingham Tower, Dublin Castle, it would appear that in 1358 lectures in Divinity, Civil and Canon Law, and other clerical studies were delivered in it. The laity do not seem to have been interested in its success; and all traces of it are lost after the reign of Henry VII.

The second chapter tells of the foundation of Trinity College on the site of an old Augustinian Monastery, that of All Hallows, in the suburbs of Dublin, which, along with its possessions, had been granted, in 1538, to the Mayor and Corporation of Dublin, as a reward for the loyalty of the city, and the assistance which it afforded to Henry during the rebellion of "Silken Thomas."

Having secured the support of Queen Elizabeth, through the exertions of Henry Ussher, Archdeacon of Dublin, Archbishop Adam Loftus addressed the Mayor and Corporation on two occasions at the Tholsel, detailing in his speeches the great advantages which the foundation of a new university would permanently secure to the city and its inhabitants. The second of these speeches is extant, and is given in an appendix to the volume before us.

The effect of the address of the Archbishop upon the Mayor and Aldermen was so powerful that they lost no time in convening a general assembly of the citizens at the Tholsel, when the site of the monastery of All Hallows was immediately granted for the intended college, a Charter of Incorporation meanwhile having been obtained from the Queen on the petition of Henry Ussher. The letter of Elizabeth to Sir William Fitzwilliam, the Lord

Deputy, and to the Irish Council, announcing her consent to the foundation and erection of a college, is dated December 29, 1592—the date given in Dr. Stubbs' text is December 21, 1591—and is preserved in the eighth volume of the Smith MSS., in the Bodleian Library, Oxford.

On the 3rd of March, 158 $\frac{1}{2}$, Letters Patent passed the Great Seal, incorporating a College as "the Mother of an University," under the style and title of "The College of the Holy and Undivided Trinity, near Dublin, founded by Queen Elizabeth."* The first stone of the building was laid on March 13, 158 $\frac{1}{2}$, and on the 16th of August following the Provost and Fellows empowered George Ray, Esq., as their attorney, to take possession of the premises.

The time occupied in preparing the College for the admission of students was not quite two years, for on the 9th of January, 158 $\frac{3}{4}$, it was ready for the work of education. Fuller, in his *Church History*, states that he had heard from credible witnesses who lived in Dublin at the time, that while the building of the College was proceeding it never rained except at night. No remains of this structure exist at the present day—indeed, no buildings prior to the reign of Queen Anne can now be found in Trinity College. The Elizabethan College formed a small square court, which was always familiarly called "The Quadrangle," until it was removed early in the latter half of the eighteenth century.

The first Chancellor of the infant University was Cecil, Lord Burleigh, who died in 1598, and was succeeded by Robert, Earl of Essex. The first Provost of Trinity College was Adam Loftus, Archbishop of Dublin, who held the office for merely a year, until a working successor was appointed in the person of Walter Travers, formerly a Fellow of Trinity College, Cambridge, a prominent Puritan and a leader of that party. Travers was sworn in on December 5, 1595, and his salary was fixed at £40 a year. When the College was opened, the first Fellows, according to James Ware, the historian, and author of *Antiquities and Irish Writers*, were Luke Chaloner, M.A.; William Daniel (afterwards Archbishop of

* "Unum Collegium Mater Universitatis . . . pro educatione, institutione et instructione juvenum et studentium in artibus et facultatibus, perpetuis futuris temporibus duraturum, et quod erit et vocabitur Collegium Sanctæ et Individuæ Trinitatis, juxta Dublin, a serenissimâ Reginâ Elizabethâ fundatum . . . ut eo melius ad bonas artes percipiendas, colendamque virtutem et religionem adjuventur."—*Charta Reg. Eliz.*

Tuam), James Hamilton, afterwards knighted, and finally raised to the peerage under the title of Viscount Clandeboyne; and James Fullerton. In the Charter of Queen Elizabeth, however, Henry Ussher, M.A., afterwards Archbishop of Armagh, and Lancelot Monie, B.A., were named Fellows along with Chaloner. The first Scholars of the House were Abel Walsh, afterwards Dean of Tuam; James Ussher, nephew of Henry Ussher, and subsequently Provost of Trinity College; and George Lee, afterwards Dean of Cork.

By far the most active man in the foundation, the building, and the early management of the College was Dr. Luke Chaloner. He had been a Fellow of Trinity College, Cambridge, and was a man of very considerable erudition, "for," observes Dr. Stubbs, with singularly defective logic, "he possessed a well-stocked library." He was prebendary of Mulhuddart, in the Cathedral of St. Patrick, and appears to have been a most diligent preacher in the city churches. From his own memorandum, he seems to have preached, prior to 1607, not fewer than 1,428 sermons, of which 379 were on the Book of Genesis, and 210 on St. Matthew's Gospel. Chaloner was an excellent man of business, and appears to have supplied the College in its early and struggling days with corn and provisions from his valuable farm at Finglas. He married a member of the Ussher family, and his only daughter, Phoebe Chaloner, was afterwards married to Archbishop James Ussher. Chaloner died April 27, 1613, and was buried in the College Chapel, incense being used at his funeral. On his tomb in the old College Chapel was this inscription:—

"Conditor hoc tumulo Chaloneri triste cadaver
Cujus ope et precibus conditur ista domus."

Under such auspices was the University of Dublin launched upon its glorious career, now extending over three centuries. It would be foreign to the purpose of this review to dwell in detail upon the early struggles and triumphs of the University, and accordingly we hasten on to Chapter IX. of Dr. Stubbs' history, in which an account is given of the rise of the great Medical School, which at the close of the nineteenth century so nobly reflects the splendour of its Alma Mater.

During the reign of King William III. but little facility existed for the study of medicine in Dublin. The College of Physicians had been founded in 1667, but for more than forty years afterwards, although there were many able and scientific practitioners

in Dublin, there was neither a school for the study of anatomy nor an hospital for clinical instruction in the practice of medicine and surgery.

On the 14th of June, 1710, ground was assigned by the Board of Trinity College for the erection of a Medical School; but the buildings were of the plainest character, inasmuch as the College had no money to spare. The laboratory and anatomical theatre were erected at the south-east corner of the physic garden, which at that time seems to have occupied the site of the present library. On the 16th of August, 1711, the building was formally opened. Dr. Hoyle lectured in Anatomy, Dr. Griffith in Chemistry, and Dr. Nicholson in Botany. In January, 171 $\frac{1}{2}$, it was arranged that the examination for the degree of "Doctor of Physic" should be conducted by the President and Fellows of the College of Physicians, who had the right, under their Charter, to grant licenses in the practice of physic in Dublin, and within seven miles of the city. Another part of the Charter provided that every Doctor of Physic of the University of Dublin should be admitted to the Fellowship of the College of Physicians without examination, on the payment of the usual fees.

On February 14th, 172 $\frac{2}{3}$, the Provost and Senior Fellows enacted that "no person be admitted to take a degree in Physic or in Law unless he first commence as Bachelor of Arts."

Some time previously—at the end of the seventeenth century—the Board of Trinity College had made a regulation that every candidate for a degree in Medicine in the University should give timely notice to the President and Fellows of the College of Physicians, in order that they might be present at the Acts, or exercises, by the candidate, so that they should be able to form a judgment as to his due qualifications for the degree in Medicine.

In consequence of this concession by the Board of Trinity College, the President and Fellows of the College of Physicians, on October 2nd, 1695, passed a rule to the effect that no one should be elected a Fellow of that College who had not first been admitted to the Degree of Doctor of Medicine in the University of Dublin; or, in the case of a graduate of a foreign University, unless he were first admitted to an *ad eundem* degree here. Such was the mutual agreement between the two Colleges in the year 1700, and it continued in force until 1760, when it was brought to an unexpected and sudden termination by the Fielding Ould episode or dispute.

Mr., afterwards Sir, Fielding Ould, an eminent practitioner in Midwifery in Dublin, and in 1759 Master of the Rotunda Lying-in Hospital, had been engaged in teaching in the Trinity College Medical School. He was anxious to obtain a medical degree, but had not received an Arts Education. In order to qualify him for the necessary examination, the Board of Trinity College granted him the "grace of the House" for the degree of Bachelor of Arts. The College of Physicians, when called upon to examine him, refused on the grounds that he had "no academical education," and that he was "disqualified by his occupation for a Licence to practise in our profession." The words within inverted commas are quoted from the letter on the subject from the College of Physicians, which is preserved in the Trinity College Register. The Provost and Senior Fellows then determined to dispense with the examination by the College of Physicians, and on June 9th, 1761, they resolved that the examination for Degrees in Medicine should in future be committed to the Prælectors in Chemistry and Anatomy, and to the Professor of Physic. Dr. Robert Robinson, the Prælector in Anatomy, being at that time Vice-President of the College of Physicians, refused to examine Ould. Whereupon, on the 29th of June, the Board deprived him of his office, and elected Mr. George Cleghorn in his room.

Chapter XIII. is devoted to a history of the Medical School during the last decade or so of the eighteenth century. The "School of Physic Act" (25 George III.), had directed that "Clinical Lectures" should be given in a Dublin Hospital in turn by the three King's Professors appointed by the College of Physicians, and by the three University Professors. The College of Physicians, accordingly, took a small house in Clarendon-street for the purpose of Clinical Lectures, with the approbation of the King's Professors, but without the concurrence of the University Professors, who declined to lecture. The Board of Trinity College took a legal opinion on the matter and acquainted the College of Physicians that Clinical Lectures delivered in a room in the College, or even in the house in Clarendon-street, did not come within the words or the meaning of the Act of Parliament, and consequently they could not direct the University Professors to lecture in the house in question. Their attitude towards the College of Physicians was, however, on this and subsequent occasions conciliatory, and led to the passing of the School of Physic

Act of 1800 (40 George III.), and to the opening of Sir Patrick Dun's Hospital on the 24th of June, 1808.

At the Summer Commencements of 1793, the two King's Professors, Doctors Edmund Cullen and Stephen Dickson, who had both previously graduated in Arts, had the leave of the Board of Trinity College to perform the exercises for the Degrees of M.B. and M.D., and were admitted to these degrees; "and thus," writes Dr. Stubbs, "the misunderstanding between Trinity College and the College of Physicians happily terminated."

This, the thirteenth, chapter concludes with an account of the founding of a Botanic Garden in connection with Trinity College. Towards the close of the last century Dr. Hill, then Professor of Botany in the University, rented some ground at Harold's Cross for the purpose of a Botanic Garden, and he was assisted to some extent by the authorities of Trinity College. In July, 1806, the site of the present Botanic Garden at Ball's Bridge was leased by the College for one hundred and seventy-five years, at a rent of fifteen guineas per acre.

The last chapter in the book (XVI.) contains very valuable statistics as to the progress of the University during the eighteenth century. From it we learn that from 1724 to 1740 no medical degrees appear to have been conferred. In the lists for 1740 there are four degrees of M.D. In the thirty-one years from 1743 to 1773, only 29 degrees of M.D. and 27 of M.B. were conferred, making an average of not quite one each year. We have no records of the number of students who were engaged in the study of medicine in Trinity College prior to 1786. By the School of Physic Act, passed in the 25th year of George III., matriculation by the senior lecturer was required of all students, extern as well as intern, in attendance on medical lectures in the School of Physic in Ireland. From 1786 lists of these matriculations have been preserved, and we find the total number of students who entered the School of Physic in the fifteen years, terminating with 1800, was exactly 70, or an average of not quite 5 per annum. From this we see that at no period of the last century was the study of medicine in the University of Dublin advanced beyond its infancy.

The closing 100 pages of the volume are devoted to a series of interesting notes, university records of some of the well-known members of the College in the seventeenth and eighteenth centuries—including Dr. John Stearne, the founder of the College of

Physicians in Dublin (1667), and a lengthy Appendix, containing thirty-six important documents relating to Trinity College. A full and accurate Index brings to its close a work which bears eloquent testimony to its author's literary attainments and research.

The manner in which the book has been brought out reflects credit on the University Press and on the eminent publishing firms whose names are printed on the title-page.

On Bronchial Asthma; its Pathology and Treatment. By J. B. BERKART, M.D.; late Physician to the City of London Hospital for Diseases of the Chest. Second Edition. London: J. & A. Churchill. 1889. Pp. 220.

IN spite of the many investigations that have been conducted, and the many theories that have been put forward to account for the pathology and symptoms of bronchial asthma, it cannot but be admitted that much obscurity still prevails with regard to this disease. It has been, therefore, with great pleasure that we have read Dr. Berkart's very interesting and well-written work on this subject. Although called merely a "Second Edition," this ought really to be considered as a new work, as it has been entirely rewritten.

Dr. Berkart first gives a review of the various theories that have been advanced to account for the pathology of asthma. The clinical history of the disease is next described. Dr. Berkart does not believe that a first attack of asthma occurs without warning in an otherwise perfectly healthy person. "In its typical form the disease, before it assumes its distinctive characters, is invariably, and for an indefinite period, preceded by a series of symptoms which constitute one of its integral parts." In the vast majority of cases the disease makes its first appearance as a peculiar form of inflammation, which starts in the pharynx, rapidly spreads upwards along the contiguous mucous membrane, but is at first effectively arrested in its downward course by the projecting tissues of the larynx. The irritation produced by this inflammation is supposed to be a symptom of an ordinary cold, or of "hay fever," and little attention is paid to it, so that when at last it has developed into unmistakable asthma, the asthma is thought to have come on quite insidiously. Such is Dr. Berkart's description of how asthma first develops.

The acute attacks of typical asthma are next described as being ushered in by shivering or a distinct rigor. It is interesting to note that the temperature is said generally to fluctuate between 101° and 104° F.; general malaise, weariness, and aching of the limbs exist. The first local symptom is a feeling of irritation—itching or burning—about the soft palate, soon extending to the internal ears, nose, mouth, and eyes. The naso-oral mucous membrane is deeply red and swollen; about the pharynx a croupous exudation often occurs. The larynx may be involved, giving rise to a peculiar kind of cough, which may be mistaken for whooping-cough. This series of symptoms persists for several days, then the dyspnoea sets in at night with great severity, and after persisting for a shorter or longer time subsides imperfectly, only to return again and again for a week or even longer. Then recovery may be complete, all subjective and objective symptoms having disappeared; but often, especially when these attacks have occurred repeatedly, the chronic form of the disease develops, which is mainly distinguished by the constant recurrence of dyspnoeal paroxysms, which are generally of short duration, and are separated by intervals of comparative freedom of respiration, the patient in these intervals feeling fairly well, but still evidence always existing of a persistent but imperfect stenosis of several large bronchi. The disturbances of the nervous system, of secretion, of the digestive organs, and of the circulation, and the physical signs in the lungs, which are met with during the attacks of dyspnoea, are well described.

A detailed account is given of the sputum; four varieties are distinguished—(1) the short attacks generally subside on the removal of a few greyish-white and transparent pellets, from the size of a pea to that of a hazel-nut; (2) when the dyspnoea is associated with catarrhal affections of the larger tubes, there are thick, confluent, exceedingly tenacious masses, of greyish-white colour, slightly frothy, and from two to four ounces in quantity; (3) in the acute forms of the disease there is a copious, frothy, and perfectly transparent fluid, which contains more or less abundant flocculent particles, of yellowish-white colour, of irregular shape, and of various sizes; (4) in cases of long standing there are yellow, green, or greenish-yellow balls, with the tendency to confluence, and frequently streaked with blood. If the menstruum is fluid, the form of the solid particles can be readily ascertained by pouring a small quantity of the sputum on a sheet of black glass, and allowing it to settle. Some of them then present themselves as

threads of grey or yellowish colour, straight or bent, varying in length from one-tenth of an inch to one inch, and in thickness from that of a hair to that of a woollen fibre. Some of these threads are imbedded in solid masses, cylindrical in shape, sometimes branched, which may be as much as three inches long and one-eighth of an inch in thickness—evidently casts of bronchial tubes. On microscopic examination the fine threads are generally easily seen to be made up of strands and fibres woven together on the plan, so to speak, of the figure of 8. Some have a close texture, appearing like cords with fibres projecting along their surfaces, but as a rule they readily unwind, either the whole cord becoming unravelled, or else only the outer layers becoming loose, while the core continues tightly wound, in which state they represent the central thread and outer spiral described by Curschmann. At last the whole structure becomes unfolded. In the meshes between the fibres are seen—(1) leucocytes in different stages of disintegration; (2) Charcot's crystals; (3) chains of a streptococcus; (4) a small bacillus. Some of the larger threads have a different composition, and consist of shreds of pseudo-membrane, which form casts of the infundibula and of the air-vesicles. These shreds contain micro-organisms which resemble pneumococci. The large casts of bronchial tubes consist of round cells, or of cylindrical epithelium, closely packed together. In the mucopurulent sputum all these structures exist to a much less degree, and are difficult to detect.

There are a large number of excellent lithographed plates, some of which are coloured, illustrating this description of the sputum.

The way in which these structures are formed is thus described:—It appears that the epithelium is the starting-point of the morbid action. It exfoliates from the greater part of the respiratory tract, especially the larger bronchi, and is then seen in the sputum, not only altered in shape, but often in coherent membranes. In the smaller bronchi it undergoes peculiar changes; it is gradually drawn out into fibres, as a piece of metal is into wire. This elongation is probably effected by the dropping of the heavier body of the cell which drags upon its inserted portion. In that way the fibres on opposite walls meet, interlace, and form some of the threads. The desquamation of the epithelium is followed by a copious emigration of leucocytes, which may be so considerable as to occlude tubes not exceeding one-eighth of an inch in diameter. Dr. Berkart believes that many of the leucocytes, too, are converted

into fibrinous and hyaline threads. The threads which develop in the bronchioles, when once detached from their matrix, are generally readily expelled, but may be entangled in the casts of the larger tubes.

After this description of the sputum, Dr. Berkart next proceeds to state his theory of the pathology of asthma. "The sputa in asthma afford ample evidence by their structure and chemical composition that they are the product of a fibrinous exudation into the smaller bronchi." . . . "The conclusion seems irresistible that what is commonly described as bronchial asthma is an acute and progressive—nay, almost erysipelatous form of inflammation, which extends from the pharynx upwards and downwards, and is accompanied by a croupous exudation. When the disease has once declared itself, it becomes habitual, resembling in that respect also a certain form of erysipelas. The tendency to recurrence is, no doubt, mainly due to the persistence of a peculiar predisposition; but in some measure it is increased also by the attacks themselves, which enhance the vulnerability of the tissues. The surface of the mucons membrane gradually loses its power of reaction, by means of which it rids itself of the special morbid agent. The signs of irritation, which are at first the more obvious, become, in the course of time, less acute, whereas those of exudation assume a greater prominence."

The croupous exudation into the bronchioles, however, cannot by itself alone be considered to be the immediate cause of the dyspnoeal paroxysms. After even severe paroxysms the quantity of sputum has often been found to be so small that it could not be supposed there was a very extensive inflammation of the bronchial tubes. Again, it would be difficult to account for the fitful appearance of the attacks, and their sudden onset and subsidence. Dr. Berkart, too, considers that the chief obstruction is situated in some of the larger air-tubes. He believes "that the immediate cause of the dyspnoeal paroxysms is a transient stenosis of the main bronchi, or even of the trachea. Its mode of production resembles, in many respects, thrombosis and embolism. As in the blood-vessels, so here the function is in no way disturbed so long as only a limited number of tubes is obstructed. The exudation is harmless, so to say, at its place of origin, and its presence does not betray itself even by cough, which is not induced by irritation of the bronchioles. Gradually, however, the exudation shrinks and undergoes other regressive changes, in consequence of which

it is detached from its matrix, and rendered movable. Air can now pass between it and the bronchial wall. The *vis à tergo* thus created, although sufficient to displace it, is too slight to effect its expulsion. Owing to its great tenacity the plug is in its onward course arrested, and however small it may be in size, it necessarily diminishes the calibre of even a large bronchus. In asthmatics there are grounds for supposing that the trachea and main bronchi are abnormally small. It is evident, therefore, that a considerable stenosis may thus be readily produced. This stenosis is the cause of the paroxysm; but the plug, coming as it does from below upwards, acts in the manner of an expiratory valve, allowing the access, but preventing the egress of air. The thorax becomes distended to its utmost limits—expiration, though prolonged and actively performed, is nevertheless ineffectual; to some extent, too, these forcible respiratory movements proceed from the irritation of the sensory fibres of the *vagus*. The presence of a foreign body at or near the orifices of the air-passages causes unsuitable contractions of the muscles which regulate their capacities. The embolic plug, arrested in one of the main tubes, acts in the manner here suggested, and produces what may be termed a “bronchial tenesmus.”

The manner in which the paroxysm is brought to its termination is as follows:—Owing to the diminished pressure in the bronchial tubes behind the obstacle, an increased amount of serum exudes into them, which, by flushing out the plugged tube, serves to remove the obstacle, and the perviousness of the passages is restored. But the same process may occur over again, producing a new paroxysm, and so the alternation of symptoms persists till the chest is entirely cleared.

It will be seen that Dr. Berkart's theory of the pathology of asthma is a somewhat complex one, including as it does the distinctive features of several of the older views. He believes that in this disease there exist—(1) an inflammation of the smaller bronchi, with croupous exudation; (2) emboli from this exudation which obstruct the large bronchi; and (3) some spasm or “bronchial tenesmus” about the obstructing plug. But although we must admire the clearness with which Dr. Berkart puts forward his views, and the ingenuity with which he supports them with clinical cases, we are still far from being convinced that his views are correct, and we see many difficulties in their way. We find great difficulty in understanding how an embolus from a small tube could

stick in a much larger tube so firmly as to resist, for a considerable time, all efforts to expel it. Embolism from a larger to a smaller tube is easily understood, but the reverse process seems to us rather obscure, especially as the walls of the larger tube are moist, and do not offer a surface to which the embolus would readily adhere. Again, if the paroxysms of dyspnoea were due, in all cases of asthma, to some organic obstruction in the main bronchi, we should expect that death would occur during an attack far more frequently than it actually does. Dr. Berkart's statement, too, which serves to support his theory of a general inflammation of the respiratory passages, that "the temperature fluctuates between 101° and 104° F." is curiously at variance with the observations of many excellent clinical observers. For example, Sir T. Watson, in his definition of asthma, says it is "unattended with fever." On these points we regret Dr. Berkart does not give more particulars.

There are interesting chapters on the Complications, the Diagnosis, and the Course of Asthma.

With regard to treatment of the paroxysms, the author is of opinion that nothing can so rapidly subdue the "bronchial tenesmus," and alleviate the paroxysms, as the subcutaneous injection of morphin. He says there is no contra-indication to this treatment, he has never seen any ill results, and the only precaution necessary is carefully to adjust the dose to the requirements of the case. It is to be regretted that Dr. Berkart does not give us any hint as to how he adjusts the dose. The "pusillanimous who refuse to submit to an injection" may have opium or chloral. A mustard leaf or poultice may give some slight relief. The room should be kept well ventilated. Stimulants and aperients may be given if required.

"All the other remedies commonly recommended are useless. The fumes of various cigarettes and powders—which are often used by asthmatics—act merely by the forcible cough which they excite when inhaled." Chloroform and ether are useless in severe attacks. Nitrite of amyl, nitro-glycerine, and belladonna, may assist the circulation, but have no effect on the paroxysm. Hot coffee or hot alcoholic drinks merely stimulate expectoration by means of the hot water which they contain.

When the early symptoms of an attack, to which we have already referred—sneezing, inflammation of the pharynx and nose, &c.—are first noticed, the nose, mouth, and pharynx should be thoroughly washed and cleaned with a concentrated solution of borax, to which

a few drops of liq. hydrarg. perchlor. (B. P.) have been added, and quinine should be given in large doses—15 grains at once for an adult. If these remedies are used there is reasonable prospect of preventing the extension of the disease to the bronchi.

In conclusion, although we cannot agree with every statement in this work, still we have much pleasure in recommending Dr. Berkart's very well written and interesting essay to all those who take any interest in the various questions connected with bronchial asthma.

Food in Health and Disease. By J. BURNEY YEO, M.D., F.R.C.P.;
Professor of Clinical Therapeutics in King's College, London,
and Physician to King's College Hospital. London: Cassell &
Co. 1889. Pp. 583.

ALTHOUGH the properties and values of the articles of diet in more or less common use, the construction of dietaries for prisons, hospitals, &c., and the nourishment most suitable for persons affected with disease are subjects with which it is necessary for every medical man to be familiar, nevertheless very few, if any, reliable works had been published which treated of all these subjects, until Dr. Burney Yeo's work on "Food in Health and Disease" appeared. We have read it with great pleasure, and we cordially recommend it.

Dr. Yeo first describes in a very instructive and interesting manner the constitution and qualities of almost all the foods, both animal and vegetable, which are in ordinary use. A large number of tables of analyses are given; alcoholic beverages, tea, and coffee receive a good deal of attention. There is a useful chapter on the cooking and preparation of food. The dietaries in the British and foreign armies, and the feeding of infants, children, and old people, are treated of in a careful and thorough manner. A number of dietaries for infants and children, drawn up by various authorities on this subject, are included in this chapter.

The second part of the book relates to Food in Disease. The diet most suitable for patients suffering from all the ordinary diseases met with in this country is described with a care and minuteness of detail which is to be met with in but few works on medicine. And what renders the book still more valuable is that Dr. Yeo does not merely give his own views upon each subject, but he also refers largely to the views of other authorities, both British

and foreign. Thus, for example, in the chapter on Diabetes, we find nine complete dietaries—Pavy's, Seegen's, Sir William Roberts', Germain Sée's, Dujardin-Beaumetz's, Bouchardat's, Cantani's, Ebstein's, and Düring's—as well as copious references to the views of a large number of other writers. There are very good chapters on the treatment of Obesity, the dietetics of Neurasthenia (massage treatment), and artificial digestion with peptonising agents. A number of Hospital Dietaries are appended, as well as about eighty select recipes for the dietary of invalids.

From all this it will be seen that we regard this work as an extremely valuable one—it contains, in an interesting and well-arranged form, a great mass of information which heretofore only existed scattered through the pages of many books, medical, hygienic, and physiological. While, however, giving it this high praise, we must call attention to what we consider a few defects in it. We think that Dr. Yeo has not sufficiently explained the use of cellulose in the diet of man, and has spoken rather slightly of this substance. We read—"Cellulose is only capable of serving as human food when quite young and tender. It tends quickly to become 'woody,' and is then not only itself incapable of digestion by man, but it hinders the digestion of the other constituents associated with it." We are far from regarding cellulose as useless: on the contrary, its usefulness is due to this very fact that it is not capable of being digested; the undissolved particles give size to the fæces, and render them more or less porous and light in consistence, so enabling the intestinal peristalsis to move them onwards. In animals fed on food free from cellulose the intestines have been found filled with sticky fæces of the consistence of glue which adhered closely to the walls of the intestine. Although in man a diet free from cellulose does not lead to such extreme results, still it often causes obstinate constipation, and, as Professor Bunge says,* "habitual constipation would not, perhaps, be such a common affection if we were accustomed from childhood to use food rich in woody fibres. The advantages of a diet rich in cellulose far surpass its drawbacks."

The paragraph relating to the two modes of coagulating milk, the one with rennet, the other with acids, is not, in our opinion, at all clear. We read—"It (i.e., the coagulation of milk by means of rennet) is a process quite distinct from the coagulation of milk by the gastric and pancreatic juices, or from that produced by other

* *Lehrbuch der Phys. und path. Chemie.* 1889. P. 77.

acids outside the body." Considering merely the words as they stand, they would seem to state that rennet coagulated milk in one way, and that a second kind of coagulation was caused by the gastric and pancreatic juices, and by acids, which, of course, is not what Dr. Yeo means.

There are a few other matters which we would like to see altered, but they are comparatively insignificant in importance. We must, in conclusion, express again our very high opinion of the value of "Food in Health and Disease," and we cordially recommend it to all medical men.

The Medical Annual and Practitioners' Index: A Work of Reference for Medical Practitioners. 1890. Eighth Year. Bristol: John Wright & Co. 12mo. Pp. 646.

THERE is nothing "provincial" about this most useful Annual which Bristol sends us, and we are glad to learn that its popularity and its circulation are increasing at both sides of the Atlantic. The present issue is an improvement upon the last; but we are assured in the preface that its form has attained finality. It will be invaluable to those few of our professional brethren who have not time or opportunity to read *all* the periodical literature which is produced for our information, and still more to that little minority who would not read it if they could. The "Dictionary of New Remedies," which opens the volume, is not so formidable as such lists so often are to old-fashioned practitioners—occupying only 47 pages, and occupied, to a considerable extent, with new applications of old remedies. It is followed by a valuable treatise on Baths, or Thermo-Therapeutics, as the author (Dr. Percy Wilde, of Bath) terms, not unhappily, this method of treatment. Dr. Rockwell, of New York, contributes a practical essay on Electro-Therapeutics, followed by a short paper on Uterine Electro-Therapeutics by Dr. Skein Keith, in which Apostoli's method is carefully described and decidedly recommended. "Every case of uterine fibroid," he says, "appears to be amenable to this treatment, and the worse the case the better is the result. Probably, there is most room for improvement in such cases." A little further on we are warned, however, that "the result often does not come at once. Indeed, quite a number are at first worse, instead of better." In Part II.—New Treatment—eight pages are devoted to anæsthetics, and the difficulties and dangers besetting

their administration. We sought in vain in this paper of Dr. Hewitt's for any allusion to the elaborate researches of the Hyderabad Commission. Mr. Elam gives a valuable *résumé* of the present state of brain-surgery, under the heads of Topography, Traumatism, Abscess, Epilepsy and Tumours, and the same surgeon surveys the result of the year's work in relation to "Cancer and Malignant Neoplasms." Dr. Crombie, Superintendent of the Calcutta General Hospital, treats briefly of cholera, chiefly with reference to the specific bacillus. The latest infallible treatment for this disease—blisters below the mastoid processes—has been suggested since the publication of the Annual. Dr. C. Lloyd Tuckey's short paper on Hypnotism should be read, and we share his hope that it may "induce some medical men to inquire into and use the system," whereby "they will prevent it falling into the hands of charlatans." Leprosy deserved more than fourteen lines from Dr. Crombie, and we scarcely think that gurjun or chaulmoogra oil comes under any definition of "new treatment." In Part III., Sanitary Science occupies 24 pages, contributed by Mr. Davies, of Bristol, and full of practical information. Lists of new books, periodicals, lunatic asylums, &c., &c., are included in this Part, and add to the value of the Annual. The alphabetical arrangement is adopted throughout the volume, and indexes, general and special, are also supplied. The *Medical Annual* deserves success.

The Pulse. By W. H. BROADBENT, M.D., F.R.C.P.; Senior Physician to, and Lecturer on Clinical Medicine in, the Medical School of St. Mary's Hospital; Consulting Physician to the London Fever Hospital; late President of the Clinical, Medical, and Harveian Societies. Illustrated with 59 Sphygmographic Tracings. London: Cassell and Co., Ltd. 1890. Pp. 312.

THIS volume is the latest addition to Messrs. Cassell's well-known series of Clinical Manuals. It was only to be expected that any work on the subject of the Pulse by so distinguished a writer and experienced a physician as Dr. Broadbent, would prove a valuable addition to the literature of the subject; and a careful perusal of the book shows that it quite comes up to our expectations, high though they were. It is for the most part a reproduction of the Croonian Lectures on the Pulse, delivered before the College of Physicians, London, in 1887; but many alterations and additions

have been made—especially we may note the addition of a chapter on the Sounds of the Heart, which, as Dr. Broadbent says, “must always be taken into consideration if the full significance of variations in the character of the pulse is to be estimated.”

The first chapter contains an interesting historical account of the Pulse, including a translation of part of a treatise by Galen on this subject, which shows him carefully the physical characters of the pulse had been studied by him. The production and significance of the pulse, sphygmographic tracings, and the modes of feeling the pulse are all well discussed in a thoroughly practical spirit. With regard to the once much vaunted sphygmograph, Dr. Broadbent, while considering it to be occasionally useful, says—“I am of opinion that we learn by means of the educated finger all that the sphygmograph can teach, and more.”

There is a very useful account of the Heart Sounds in relation to the pulse: accentuation, reduplication, and other modifications of them are carefully and accurately described. Reduplication of the first sound is considered undoubtedly due to asynchronism of the initial systolic contraction of the ventricles.

The next chapter treats of Increased Frequency of the Pulse. A very interesting account is given of that remarkable class of cases in which the heart for considerable periods of time beats with extraordinary rapidity, although no cause for this frequency can be detected. Details are given of a number of cases, in some of which the heart beat from 200 to 300 times per minute. Dr. Broadbent refers to several *post-mortem* examinations made on patients who had died while suffering from this affection, but in none of them was anything found which could explain the rapid heart action. Infrequent, irregular, high pressure, low pressure, and many other varieties of pulse are described, many clinical cases illustrating all these are referred to, and practical indications for diagnosis, prognosis, and treatment are constantly introduced, and serve to render the book extremely valuable to the clinical physician. The effect on the pulse produced by various acute and chronic diseases, including the different forms of valvular disease of the heart, are discussed at considerable length. With regard to the increased blood pressure in many forms of Bright's disease, Dr. Broadbent adopts a modification of Dr. G. Johnson's theory, believing that the obstruction to the circulation occurs primarily in the systemic capillaries, and that in a secondary manner the arterioles contract, and in some measure shut off the contaminated blood from the

tissues. We are surprised to see that the only other theory that is referred to is the arterio-capillary fibrosis of Gull and Sutton, and that no mention is made of Cohnheim's researches on this subject.

Many excellent sphygmographic tracings and a few cardiograms are given, illustrating the various points raised in the volume, varieties of pulse, effects of treatment, &c.

We can cordially recommend this little book. It contains a very large amount of reliable and practical information, not only about the Pulse itself, but also about many diseases and morbid states which produce some effect on, or have some connection with, the pulse. We do not know of any other work which, on many important subjects connected with the circulation, contains so much valuable information in such an accessible form. The author's style, too, is always lucid and pleasant to read.

The Transactions of the Medico-Chirurgical Society of Edinburgh.

Vol. VIII. New Series. Edinburgh: Oliver & Boyd. 1889.

Pp. 234.

THE work of the Society's Session, 1888-89, included the exhibition of 19 patients, 34 pathological specimens, and 12 miscellaneous objects; besides the reading of 19 original papers and 3 special discussions. The subjects of the last were:—The necessity for further legislation for the cure of habitual drunkards, the pathology and treatment of strumous glands, and intestinal obstruction.

All the original communications are worthy of the Society. We wish to call special attention to the first—"Notes on Report of the Departmental Committee Appointed to Inquire into Pleuropneumonia and Tuberculosis in the United Kingdom." A year ago Principal Walley, M.R.C.V.S., read a paper before the Society on "Animal Tuberculosis in Relation to Consumption in Man," which was followed by a full discussion.* On the motion of Dr. Peel Ritchie (now President R.C.S.Ed., and Vice-President of the Society), a memorial was presented to the Secretary of State for Scotland, calling his attention to the great importance of the relation of tuberculosis and other bovine diseases to the health of the community, and praying him to use his influence "to bring into operation the statutes and enactments of the Government towards the prevention of those evils, and, if necessary, for the

* See *Trans. Medico-Chirurgical Society of Edinburgh.* Vol. VII.

introduction of additional means for the regulation and supervision of the whole traffic in milk and in butchers' meat supplied to the inhabitants." The result was a request that the Society would depute two of its members to give evidence on the subject before the Departmental Committee of the Privy Council then considering pleuro-pneumonia and tuberculosis in cattle. Dr. Henry Littlejohn and Dr. Peel Ritchie were selected. To the latter we are indebted for the communication which we are commending to the notice of our readers. He commenced operations by requesting that the secretary of the Society should intimate to the Fellows the desirability of communicating to Dr. Ritchie any facts within their knowledge "which tended to support the view that bovine tuberculosis was capable of being transmitted to human beings, either by the milk of affected animals or by the consumption of their flesh." The intimation elicited no information.

The Departmental Committee was appointed by Lord Cranbrook on the 16th of April, 1888. It began its work on the following day, continued to sit until the 4th of June—sat 17 days, and examined 44 witnesses, British, Irish, and Colonial. With the first part of its report, dealing with the pleuro-pneumonia of cattle, Dr. Ritchie's paper is not concerned. The second part is devoted to "Tuberculosis (Animal): its Nature and extent in the United Kingdom, and the Means to be Adopted to arrest its Progress;" and all who have not access to the report should read the *résumé* which this communication supplies. We shall mention two points only. The order of liability of domesticated animals to tuberculosis is stated to be:—1, man; 2, milch cows; 3, fowls; 4, rodents; 5, pigs; 6, goats; 7, sheep; 8, horses; 9, carnivora (as dogs, cats, &c.), in which it occurs very rarely. As regards the proportionate frequency of occurrence of tuberculosis in man and in the lower animals, we are still far from having figures on which we can rely. The death-rate due to the tubercular bacillus in the human subject is estimated to be "10 to 14 per cent. of all deaths." In Edinburgh deaths from phthisis were 11·8 per cent. of total deaths; and from all tubercular diseases 16·4. For all Scotland the numbers are 10·75 and 14·55. The numbers for cattle, based on returns of tubercular cattle slaughtered, are so wild as to be useless. They vary from 50 per cent. near Glasgow to 0·2 at Edinburgh. In Germany the proportion is said to vary from 1·5 to 20 per cent., according to district; but this extraordinary discrepancy is explained by the Committee—the low rate

belonging to open-air herds, the high to animals "cohabiting in sheds."

The discussion "anent" the case of habitual drunkards well repays perusal. We learn that little has been done in England—and in Ireland nothing—to take advantage of the Act of 1879. There are, however, in England, seven licensed houses for male habitual drunkards, but for females, none. No satisfactory information as to success of treatment can be obtained from the private houses; but the figures of the Dalrymple Home (Herts.) are encouraging. Dr. Norman Kerr reported that, of 115 cases discharged from this Home up to January 31st, 1888, 52 were doing well in February, 1889. The following facts, supplied to Dr. Peddie by the late Sheriff Barclay, of Perth, illustrate the close analogy that exists between ordinary insanity and habitual alcoholic intoxication:—

"Between the years 1844 and 1865 one woman was committed to prison 167 times for being drunk, and, when drunk, her invariable practice was to smash windows. Then there was a man, who, when drunk, stole nothing but Bibles; he was an old soldier, wounded in the head; when drunk, the objects of theft were always Bibles; and he was transported for the seventh act of Bible-stealing. Then another man stole nothing but spades; a woman stole nothing but shoes; another, nothing but shawls; and there was a curious case (the indictment against whom I have) of a man, named Grubb, who was transported for the seventh act of stealing a tub. There was nothing in his line of life, and nothing in his prospects, no motive, to make him specially desire tubs; but, so it was, that when he stole, it was always, excepting on one occasion, a tub."

The Causes and Treatment of Abortion. By ROBERT REID RENTOUL, M.D., L.R.C.P. Ed.; M.R.C.S.; Fellow of the Obstetrical Society, London. With two coloured plates and 35 engravings. Edinburgh and London: Young J. Pentland. 1889. 8vo. Cloth, pp. 271.

THIS volume is, in the main, an extension of an essay on the causes and treatment of abortion, which obtained the prize offered by Dr. Ward Cousins in 1886.

The work opens with an introduction or preface from the pen of Mr. Lawson Tait, in which he says:—"As an exhaustive discussion of a special branch of medical literature, I have seen nothing better in the English language, and the clearness of its

expression, as well as the precision of its conclusions, place it far above the kind of productions with which we are favoured in most other languages than our own."

An historical chapter then follows, which shows the deep research and learning of the author. Dr. Rentoul has followed, for the most part, the classification of abortion and its causes, as given by Barnes. Accordingly, the work treats in order with the maternal, foetal, and paternal causes. We next have chapters on criminal abortion or foeticide, and abortion in plants and animals. In the succeeding two chapters we have a very full description of the symptoms, diagnosis, and prognosis of abortion. Chapter X. discusses the complications and sequelæ of abortion and their treatment. The concluding chapter is devoted to the treatment of abortion, which is particularly good and clear.

We commend the work to our readers as a complete digest of all that is known and written on the subject; and in doing so have to express our regret that circumstances prevented an earlier notice of it in our pages.

Transactions of the Pathological Society of London. Vols. XXXVIII. (1887) and XXXIX. (1888). Pp. 511 and 498.

UNFORESEEN circumstances have led to some delay in noticing these the last two volumes of the long series of the *Transactions of the Pathological Society of London*. These volumes are fully equal to their predecessors in the variety and value of the letter-press, and in the execution of the plates and woodcuts. The diseases of the lower animals, and even those of vegetables, are frequently referred to. A particular feature of the latter volumes of this Society are the "Special Communications," three of which, in Vol. XXXIX., are of peculiar interest—An Investigation into the so-called Hendon Cow Disease, in its relation to Scarlet Fever in Man [with Plates XXIV.—XXXIII.], by Edgar Crookshank, M.B.; a Note on the Histology of Sterile, Incubated, Cancerous, and Healthy Tissues, by Samuel G. Shattock and Charles A. Ballance (towards the expenses of this research a grant was made by the British Medical Association); on Hæmorrhagic Infarction of the Liver, by L. C. Woolridge, M.D. Hitherto it has not been possible to obtain experimentally a hæmorrhagic infarction of the liver. Owing to the fact that the hepatic artery breaks up into capillaries which anastomose with those of the portal vein, the

occlusion of the branches of the latter by emboli is not followed by any hæmorrhagic infarct. The author injects a substance—the preparation and properties of which he has described in *Proceedings of the Royal Society*, 1866—into the jugular vein of a dog; a few days after a clot is found in the portal vein, and the liver shows more or less extensive infarctions.

This paper is only intended as a preliminary communication.

A Manual of the Practice of Medicine. By FREDERICK TAYLOR, M.D., F.R.C.P.; Physician to, and Lecturer on Medicine at, Guy's Hospital; Physician to the Evelina Hospital for Sick Children; Examiner in Materia Medica and Pharmaceutical Chemistry at the University of London. London: J. & A. Churchill. 1890. Pp. 875.

DR. TAYLOR'S *Manual* is considerably smaller than most of the reliable works which have recently appeared on this subject; nevertheless, it contains a very fairly complete account of the present state of medical practice—an account, at any rate, quite full enough to enable students to pass their prescribed examinations. It will be welcomed by all those who wish to have a clear yet concise statement of all the important facts relating to medicine. To points which are doubtful, or which are merely of theoretical interest, the author states he has devoted but little space. The reader will, however, soon find that Dr. Taylor has alluded to many recent researches in ætiology and pathology.

The work is excellently written up to date; most of the recently introduced drugs are mentioned, and there is even an article on the recent epidemic of influenza. It contains a number of diagrams illustrative of the temperature in various diseases, of cardiac murmurs, and of sphygmographic tracings. By the way, we wonder why, to illustrate typhus fever, a temperature chart was chosen in which the crisis occurred on the tenth day; surely it would have been easy to find a more typical one. The other temperature charts are, however, very good.

Considering that the book will be largely read by students, we think it is a pity that Dr. Taylor has not enlarged somewhat the sections on treatment, and has not included some prescriptions in them. We know that students and young practitioners often find a difficulty in translating into the form of a prescription such a statement as the following:—"In capillary bronchitis the drugs of

most value are carbonate of ammonia, senega, oil of turpentine, and lobelia in frequent doses." The student must learn not only what drug to give, but also in what form it will be most efficacious and most agreeable to the patient. Why should not writers on the practice of medicine introduce into their works lists of their favourite prescriptions, just as writers on skin diseases and on many other specialties do.

On the whole, we think it would be difficult to find another work on the same subject which contained in a similar space so much information. Dr. Taylor's style of writing, too, is clear and readable, and we feel sure that his book will be widely read and appreciated.

Leprosy and its Prevention, as Illustrated by Norwegian Experience.

By ROBSON ROOSE, M.D. London: H. K. Lewis. 1890. Pp. 100.

DR. ROOSE has presented in a readable and popular form the chief points which have been established about the history, ætiology, pathology, and treatment of leprosy. The book is, of course, largely a compilation, as most of it is drawn from the writings of others; but summer visits to Norway, and diligent inquiry amongst the local medical men, have enabled the author to collate intelligently and deduce discreetly.

The opinions of the author may be briefly summed up:—Leprosy is a contagious disease, and due to a specific virus; it is capable of being transmitted by parents to their offspring. Other alleged causes of leprosy are operative only so far as they injure the general health. To check the spread of leprosy two measures must be adopted—the sufferers must be isolated, and the sanitary conditions of infected districts must be improved in every possible manner; in early stages complete change to a district free from leprosy presents a fair chance of cure.

Dr. Roose insists upon the power of treatment to alleviate, and warmly protests against the way in which lepers are allowed to go about in most parts of the world without treatment, and mixing freely with other people. England does not come well out of the investigation. In spite of its mediæval leper houses and "leper windows," leprosy is allowed to flourish unchecked in most of her colonies. Hindostan contains a quarter of a million of lepers, and no part of British India is free from the disease; yet segregation

is not compulsory, and things are allowed to remain unimproved owing to dislike to wrestle with so great a difficulty.

The following paragraph gives a vivid description of the present state of affairs:—

“It is unnecessary to repeat the accounts, lately given by many Indian journals, of the so-called ‘leper nuisance.’ These are some of the statements, the truth of which is beyond question. In India, lepers are allowed to wander about wherever they please; in large towns they haunt the markets, tramway stations, and other places of public resort; they squat around tanks, performing their ablutions and dressing their sores; and in the City of Bombay they are wont to congregate close to schools where thousands of boys are educated.”

The Committee in whose work the Prince of Wales takes such a laudable interest will evidently not languish for want of something to do.

RECENT WORKS ON ELECTRICITY.

1. *The Uses of Electrolysis in Surgery.* By W. E. STEAVENSON, M.D., M.R.C.P. London: J. & A. Churchill. 1890. Pp. 172.

2. *Electricity, and the methods of its employment in removing Superfluous Hair and other Facial Blemishes.* By PLYM S. HAYES, A.M., M.D. Chicago: W. T. Keener. 1889. Pp. 123.

1. In the first of these volumes Dr. Steavenson has collected, in a concise and useful form, various contributions to different medical journals, dealing with the diseases to which treatment by electrolysis is applicable, and giving rules for the methods of its employment. The subject is treated in an admirable manner, and the several operations are carefully described. Specially good are those parts dealing with the electrolysis of urethral strictures, and with Apostoli's treatment of uterine fibro-myomata. The former is a mode of surgical procedure which has met with too little support from surgeons in this country, whether through prejudice or ignorance of requisite electrical knowledge and skill we know not. It certainly deserves a trial, especially in those cases of so-called “resilient stricture” which resist all other methods of treatment. We cannot, however, agree with Dr. Steavenson in its application to those cases which can be successfully dealt with by ordinary dilatation; but are glad to observe that he lays due stress on the

essential principle of weak currents applied at long intervals, first enunciated clearly by Dr. Newman, of New York. The chapter on Diseases of Women will be of much interest to gynæcologists. The details of the operation, as applied to uterine tumours, are carefully given, and so are elaborate measurements to be used to determine any alteration in the size of the tumour—a point, we fear, not accurately determined by some operators. A Stöhrer's battery is specially recommended in these cases, "because the electromotive force is high and the internal resistance low, and polarization does not take place to such an extent as in many other forms of battery." A commencing current strength of 70–80 milliampères is recommended, gradually increasing on subsequent occasions to whatever strength may be found necessary. A sitting of five to eight minutes is considered sufficient. Though electrolysis has been tried and found of use in many other minor operations of surgery, we must be on our guard against needlessly recommending the usurpation of the seat of an old and well-tried procedure by a new-fangled method which, in the hands of the inexperienced or reckless, might lead (indeed, has led) to serious and permanent injury. In skilled hands, and in suitable cases, we undoubtedly possess in electrolysis a valuable aid to the surgeon's art; but it would be decidedly rash to urge its adoption in all classes of cases, or in such as fistula in ano, piles, &c., where less risky methods give the best possible results. Dr. Steavenson, however, is no faddist, and wisely points out some of the more common accidents that may happen, while demanding on the part of the operator "a technical knowledge of the subject and an intimate acquaintance with the manner of using the different forms of batteries."

2. From the pleasant task of reviewing a scientific book on a scientific method of treatment, we turn with mingled feelings to the contemplation of the second book dealing with a kindred subject. It is a sample of a class that is, unfortunately, only too common in American literature, and is not without imitators at home. Professing to be "a monograph" (we wish all monographs could be read in half an hour!) it is in reality a cloth-bound pamphlet, advertising the wares of a certain "Battery and Optical Co.," which shall get no further advertisement here, and whose trade handbills were plentifully dispersed through its pages. The style in which the book is written is only surpassed by the ignorance displayed. There are some figures illustrating the instruments of

said company, and a few which are stated to be drawings of histological preparations of hair; but, as they do not resemble anything in the heavens above or on the earth beneath, or yet in the waters under the earth, sources of many strange things, we cannot express an opinion on them. Fig. 1, however, which is stated to be from a microscopic preparation in possession of the author, is certainly a reproduction, and a remarkably bad reproduction, of Biesiadecki's time-worn drawing. Errors are seldom so crowded in so small a compass. "*Nævus araneus*" occurs three times, though, possibly, it may be a printer's error; and we are not certain that "tenetome" may not be a recognised form in the new American orthography; but no doubt can be entertained as to the author's proprietary rights in the following beautiful sentences:—"Allowing the eschar to remain as long as possible, and coating the surface by oxide of zinc ointment or some other substance which acts as a protective is advised, because when *these* precautions are used there is less danger of pitting taking place." And, writing of acne and its forms, he says:—"The galvanic current acts on these affections both by its local effect on the diseased part, and also by reason of its *action on the nerves of vegetative life*"! The book would be too trivial to merit notice were it not one of a class which we cannot too strongly condemn. To the chapter of "Don'ts" with which the author closes his "monograph," we would add one more—"Don't buy it."

Diseases of the Skin. By W. ALLAN JAMIESON, M.D., F.R.C.P., Ed. Second Edition. With woodcut and 8 coloured illustrations. Edinburgh and London: Young J. Pentland. 1889. Pp. 583.

Two excellent works upon diseases of the skin have lately been issued—one south of the Tweed and one from the north. The former, by Dr. Radcliffe Crocker, has been already noticed in these pages, and we now invite attention to Dr. Jamieson's textbook.

That it has met with favour is shown by the exhaustion of a large edition in less than nine months, and an investigation of its contents soon proves that there is good reason for its success.

The author evinces a thorough grasp of his subject, and writes in an attractive and instructive manner. We can especially commend the therapeutical sections, and the directions for the manage-

ment of eczema, particularly as it occurs in children, are the best that we have met with.

The introductory chapters are well worth studying—*e.g.*, on the hygiene of the skin; on some of the causes which regulate the localisation of skin diseases; and on the mode of studying skin diseases. It is unnecessary to go through Dr. Jamieson's book in detail. Suffice it to say that there is much to admire and little to find fault with, and we do not think that anyone will regret its purchase.

The Town Dweller; his Needs and his Wants. By J. MILNER FOTHERGILL, M.D. With an Introduction by B. W. RICHARDSON, M.D. London: H. K. Lewis. 1889. Pp. 118.

It is always difficult to review a posthumous book. If defective, it is hard to point out faults which the author can no longer correct; and if of real merit, it is saddening to think that the hand which wielded the pen has laid it aside for ever, and that the well-stored brain can no longer communicate its thoughts.

The "Town Dweller" is written in the style so well known and so generally admired by readers of the other works from the same prolific pen. Dr. Richardson, in his preface, suggests that the manuscript was the draft of a larger and more comprehensive treatise, but the divisions are so well chosen, and the progress from point to point so clear, that the work as it is is eminently readable, and its very sketchiness renders it the more suggestive.

The headings of the chapters will exhibit the scope of the book:—The Town Immigrant: his dwelling—his surroundings—the air he breathes—the water he drinks—the food he eats—his beverages—his work—his amusements—his mind and body—his progeny.

Some of Dr. Fothergill's sentences are as concise and "meaty" as proverbs, as the following, taken almost at random, show:—

"Flags and pavements produce no grass."

"It is only the digested food which really counts; the rest might as well have been left on the plate."

"Late developments often make very good growth."

"Brains are the finest raw materials of a country."

"Disease takes the hindmost."

"To kill the weak and injure the middling is a long price for education."

"The neurotic woman—she possesses great energy, and seems to

borrow from herself to-morrow's force. And when to-morrow comes she is in bed with a headache."

"The large meat-eater—avoids the stomach-ache, but in so doing drives his liver downwards to the uric acid formation."

The chapter on food is the most useful, and contains numerous capital hints—such as the value of toffee for children who dislike fat, and the inferiority of cod-liver oil to bacon-fat. Various methods of preparing foods for dyspeptics are described, and the marked, but generally neglected superiority of baked potatoes over boiled are given prominence, but the author seems to think the cooking of the starch the only advantage, whilst in reality the retention of the salts is also a great gain.

In several parts of the book adulterations of alcoholic drinks (cocculus Indicus berries, grains of paradise, &c.) are mentioned, and their widespread evil effects described. This is an anachronism, the analytical returns showing that for some years alcoholic drinks have practically ceased to be adulterated. Fusel oil (amylic alcohol) is of course present in new whisky, but as a constituent and not an adulteration.

The author reverts to the theory so well worked out in his book on "Vaso-renal Change," that in town-dwellers the epiblast drains the meso-blast, and so starves the hypo-blast. Thus the nervous system is unduly developed at the expense of the digestive, and the neurotic dyspeptic results.

We conclude this brief notice with sorrow that there can never again be submitted to us any new matter from the talented pen of Milner Fothergill.

Chronic Bronchitis and its Treatment; a Clinical Study. By WILLIAM MURRELL, M.D., F.R.C.P. London: H. K. Lewis. 1889. Pp. 176.

DR. MURRELL has put together in a chatty and amusing form his experiments and experiences in the treatment of winter cough. The ipecacuanha spray, the tar treatment, terebene *et hoc genus omne*, apomorphia, inhalations, fuming, and other plans of treatment are all dealt with, and cases in point briefly noted.

The author ascribes the humorous touches to his patients, but sometimes at all events the patient is an unconscious humorist, as in the case of an M.P. on page 142, who was given a Vereker chloride of ammonium inhaler, with terebene, oil of cubebs, and

oil of sandal-wood in the wash-bottle, and was greatly pleased with it. "Says the smell of the sandal-wood is strangely familiar to him. Can't account for it." Again it is the author who writes:—"A mixture of two parts of syrup of tar and one part of syrup of Virginian prune is an ideal mixture. In its presence Maraschino, Curaçoa, and even green Chartreuse, naturally take a back seat."

But though light in style the lightness never extends into prolixity, and the author has compressed a large amount of useful matter into a very small space. Each chapter being devoted to a single remedy, renders reference easy. The reader cannot fail to get help in a class of cases which, though troublesome, are often very curable.

RECENT WORKS ON NURSING.

1. *A Manual of Nursing: Medical and Surgical.* By LAURENCE HUMPHRY, M.B. Illustrated. Pp. 242. London: Charles Griffin & Co. 1889.

2. *A Manual of Nursing, Medical and Surgical.* By CHARLES J. CULLINGWORTH, M.D. Third Edition, revised. Illustrated. Pp. 190. London: J. & A. Churchill. 1889.

1. IN Dr. Humphry's book the title might, with resulting precision, be extended into "A Condensed Encyclopædia of Anatomy, Medicine, Surgery, Obstetrics, and Nursing."

The general plan of the human body is sketched in 18 pages; then each part of the body is rapidly described in detail, with the symptoms and treatment of diseases. Fevers, disease in children, wounds, fractures, operations, the management of child-bed, each has a chapter—this part of the book extends to 186 pages.

The General Management of the Sick Room in private houses is dismissed in 13 pages, and Nursing Appliances in 20 pages; whilst Bandaging, Antiseptic Dressings, Artificial Respiration, Bathing, and Massage are dealt with in 13 pages, and Cookery for invalids is only afforded 4 pages.

The lectures as delivered were probably of use, but in book form their tendency would be to make women amateur doctors rather than professional nurses.

2. Dr. Cullingworth's manual may be placed in the hands of nurses, with safety and advantage. It deals thoroughly with nursing, and omits all anatomical and medical details which are

not necessary in order to enable a nurse to do her work intelligently and efficiently.

Of course there are points in which it is easy to differ from the author. For instance, he recommends ori-nasal respirators as having "the great advantage of rendering it unnecessary to adopt any particular mode of breathing—the patient may breath through mouth or nose at will." Most physicians would prefer that the nose should be selected as the inhalant aperture, and exhaling into and inhaling through the same pad, even if that pad be impregnated with some volatile antiseptic, is needlessly causing the re-breathing of respired air, with the consequent risk of auto-infection.

Again, the author advises a large pin for splitting ice—a fine needle, with its eye-end stuck into a cork, is a much better tool.

On the whole, the book deserves to be in its third edition, and may with benefit to the nursed run through many more.

The Flowering Plant, as Illustrating the First Principles of Botany.

By J. R. AINSWORTH DAVIS, B.A. (Camb.). London: Charles Griffin & Co. 1890. Pp. 181. Illustrations, 61.

THIS book is specially intended as a handbook for London Matriculation, South Kensington, and University local examinations in elementary botany, but will be found a capital handbook for those reading for any ordinary examination in botany. The author has carried out his work most carefully, and has presented the important structural and physiological points together in an interesting and striking manner.

There is great need of a glossary; technical words are often once very briefly explained in the text, and then used without any further explanation.

A bibliography also is required. Anatomy, Histology, and Physiology occupy only three pages of the appendix of practical work, the directions for cutting, staining, &c., being very scanty, and the student receiving no advice on the subject of the permanent mounting of objects. Reference to some book dealing more fully with the matter is necessary if the author wishes to encourage practical work.

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

(Continued from page 256.)

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Pathology of General Paresis.—At the meeting of the Naturhistorisch-medicinisches Verein, at Heidelberg, Nov. 6, 1888, Buchholz read a paper on this subject. He found a very abundant production of new blood-vessels in the cerebral cortex. This was most easily demonstrated by preparing the specimens with osmic acid, after Exner's method. In such preparations the new vessels could be readily seen in all stages of development.

The production of spider cells, which has been supposed by some to be an early stage of the formation of new vessels, he considers to be an independent process. Their connections are with the lymph sheaths of the vessels, not with their endothelium. In this view he is supported by Bevan Lewis, who, in his recent Text-book of Mental Diseases, describes the increase in these spider or "scavenger" cells, as he terms them, as due to a morbid condition of the lymphatic apparatus of the cortex, of which these cells are an element.

Signs of Degeneration.—Metzger (*Allgem. Zeitsch. f. Psych.* XLV., 5 and 6). This article was suggested by a medico-legal case. A girl twelve years of age robbed a child three years old of her ear-rings, and killed her by throwing her from a window. At her trial before the Criminal Court in Berlin the defence was raised that the accused was deficient in moral sense, and therefore not accountable for her actions. The court condemned her to eight years' imprisonment, holding, contrary to the opinion of the medical expert, that she fully understood the criminality of her act. On appeal the decision was confirmed, the Court holding

that absence of any feeling of moral accountability was not ground for acquittal, unless due to unconsciousness or a morbid condition. The author finds no evidence that the accused was examined with special reference to physical signs of degeneration, which he considers a serious neglect. After quoting freely from authorities on this point, he gives the results of an examination of 157 insane patients and 223 school children, from nine to sixteen years of age, with reference to malformations of the ear, palate, and teeth. Of the 157 insane persons 23 presented malformations of the palate and teeth alone, 15 of the ears alone, and 59 of the palate, teeth, and ears together, making in all 97, or 61 per cent. In 62 cases there was hereditary predisposition; of these 44, or 71 cent., presented some or all these signs of degeneration. Of the 223 school children 21 had malformations of the teeth and palate, 30 of the ears, and 59 of teeth, palate, and ears—a total of 110, or 49 per cent. In 73 of the children examined the family history was unfavourable; of these 61, or 83·5 per cent., presented signs of degeneration, while they were found only in 18 of 29 cases in which the facts in regard to heredity could not be ascertained, and in 30 of 121 cases in which there was a good family history.

At the meeting of the British Medical Association in Leeds, in August last, Dr. Francis Warner presented to the Section of Psychology the Report of the Committee appointed at the meeting of the Association in Glasgow to investigate the average development and condition of brain function among the children in primary schools. Owing to the refusal of the London School Board to allow the Committee to visit their schools, they had been compelled to confine their observations to other elementary schools in London. They examined ten public elementary schools and two certified industrial schools, containing at the time of the visits 5,344 children. The Committee took notes in 809 cases, which were divided as follows:—351 showed signs of nervousness, nerve weakness or defect, 184 in which nutrition appeared to be defective, 231 in which mental dulness was reported or observed, 231 cases presenting cranial abnormalities, and 149 with diseases or defect of eyes. The different cranial abnormalities were found to be probably due to rickets in some cases, and in others they were head-large (cause not known), head-small, dolichocephalic, or scaphocephalic, forehead narrow or shallow, not included in other groups, bosses on frontal bone, or at fontanelle, not included in other groups, and other cranial characters not in other groups. The various signs of

nervousness observed were—nervous hand, weak hand, lordosis, frontals overacting, orbicular muscles of eyelid toneless, and finger-twitches. The chief forms of diseased or defective eyes were—squint, hypermetropia, myopia, disease of cornea, disease of lids, cataract, eye lost, and nystagmus.

A Contribution to the Study of Muscular Tremor.—In the *Journal of Nervous and Mental Disease* for Feb., 1889, Dr. Petersen deals, under the above heading, with the finer pathological motions known as muscular tremblings or tremors, such as are found in hysteria, neurasthenia, multiple sclerosis, paralysis agitans, Basedow's disease, senility, and in poisoning by lead, alcohol, tobacco, &c. The theory that the coarser oscillations of eclampsia and chorea are due to explosions of force in the cortical cells of the motor areas of the brain is generally accepted; but what is the origin of the finer tremors? As regards the physiological action of muscle through the mediation of the nervous system, Weber has shown that a continued voluntary contraction in man consists of a series of single contractions rapidly following each other; Horsley and Schäfer have demonstrated that these contractions, whether natural or not, are caused by impulses from the central nervous system along the motor nerves, discharged rhythmically at the rate of ten per second. The researches of various observers into the voluntary and pathological contractions of muscle are referred to, and the author proceeds to give the results of his own observations, which were made with the Edward's sphygmograph. He believes that the tremors present in paralysis agitans, and in fear, are due to vibratory contraction in the cerebral cortex, and that the tremor found in multiple sclerosis is best explained as being developed from the motor areas of the brain—the jerky character being ascribed by Charcot and Gowers to resistance to motor contractions at sclerotic foci, and by Stephens to resistance by sclerotic changes in the optic thalamus. Dr. Petersen surmises that all tremors, save those fibrillary in character, are generated by intermittent motor impulses from the grey matter of some part of the central nervous system. The paper is illustrated by tracings of tremors taken during ten seconds in the nervous diseases before referred to.

Two Additional Cases of Hereditary Chorea.—In the same journal Dr. Wharton Sinkler describes these cases, and comments on the affection in question. Hereditary chorea, he points out, differs from ordinary chorea in that (1) it rarely occurs before middle age; (2) it never ceases spontaneously; (3) when fully

developed it wants the paroxysmal character. Huntingdon, who read a paper before the Academy of Medicine at Middleport, Ohio, in 1872, was the first to draw attention to the disease. He stated that he had seen a peculiar form of chorea in Long Island, which was hereditary, incurable, likely to be complicated with insanity, and which never occurred before thirty years of age. Two choreic families are reported by Dr. Wharton Sinkler, in which there were 11 males and 15 females, in a total of 26 cases, so that sex exerts little influence on the disease. The character of the movements is markedly like ordinary chorea, but they are not so violent; and the knee-jerk in the form of chorea under consideration is exaggerated, instead of being lessened or absent. No autopsies have been made which throw any light on the pathological anatomy of the disease, but the mental complications, and the persistent and gradually increasing movements, point to some structural disease of the brain. Treatment by medicines seems to be of little use; our attention should be directed to preventing the onset of the disease. When the age at which the patients are likely to develop the disease approaches, they should be placed under such hygienic conditions as will guard against excitement and mental strain.

Insanity produced by Ergotism.—Dr. Franz Tuzcek, of the Marburg Asylum, has studied the pathological conditions found in the nervous system in certain cases where mental derangement followed as a sequela to ergotism. Seven years ago an epidemic of spasmodic ergotism occurred in Hesse. Anxious to know the durable results of the intoxication following the mixture of ergot in the rye-bread eaten by those affected, Dr. Tuzcek has tried to keep his former patients in sight, and reports that of the 29 patients treated for ergotism in the Marburg Asylum, 9 are now dead; of the 20 survivors Dr. Tuzcek was able, in 1886, to examine 15. Of the remaining 5, 4—so far as he could learn—were free from any appearance of the disease, and the condition of one was doubtful. In those examined relapses of convulsions were frequent; 2 patients still suffer from epilepsy. Most of them have still defects of the intelligence, and are under the mental average of the normal population. Only 3 are quite sane in mind, and these 3 are the only ones in which the knee clonus returned. In one case it came back in one knee, in the other two it returned in both. There were no remaining disorders of sensibility, reaction of the pupil, or ataxia. More than half the patients still suffer from headache;

one has twitchings, giddiness, and weariness; another has giddiness, and a third tingling, girdle-feeling, and twitching; a fourth twitching in the arms and legs. The author observes that, although the symptoms of the working of the poison have thus persevered for seven years, they show no progressive character. Though the knee-jerk has never returned there is no tabes, but the patients are of diminished intelligence. In the four cases who died in the Asylum lesions were found in the posterior columns. In the grey matter Dr. Tuzek found the usual proportion of nerve-fibres, save in one case where the symptoms were worse. In this spinal cord the nerve-fibres were found deficient through the whole extent of Clarke's columns. The alteration in this tract was noticeable even to the naked eye in the prepared sections as bright points. The posterior intra-medullary root-handle, which enters the posterior horn, and radiates into Clarke's columns, had also disappeared.

Dr. Tuzek observes that the symptoms of insanity from ergotism have a close resemblance to insanity from epilepsy. The character of the fits is the same—grand mal, petit mal, intervals of rest, pre- and post-epileptic delirium; benefit from bromides. He cannot say how many were the sufferers in this epidemic, but whole families died out. Many persons still have epilepsy, and in every one of the infected villages there are a number of people who have a permanent loss of intelligence.

Pellagrous Insanity.—The parallel between the insanity following the use of diseased rye, and that following the use of diseased maize, naturally attracted Dr. Tuzek's attention. He found that though the Italian literature of pellagra was abundant, there was a deficiency in pathological examination. Wishing to judge for himself, he travelled to Northern Italy in order to study pellagra. Dr. Tuzek saw 350 pellagrous patients, and was present at 8 dissections, 4 of which he conducted himself. The symptoms of pellagra are erythema of the hands or other uncovered parts, with a feeling of burning in the skin, globus feeling, pains in the neck, girdle pains, and partial anæsthesia. There is muscular weakness, and sometimes spasms and cramps. The insanity is specially characterised by melancholy, sometimes taking the form of melancholy with stupor, which finally passes into mental weakness something like that accompanying *dementia paralytica*, but without a progressive character, and without any paralysis of the cranial nerves; mania is seldom observed. Out of 300 cases examined by Tuzek the knee phenomenon was increased in two-thirds, with

other appearances of spastic spinal paralysis. In 7 cases the knee phenomenon was wanting; in 23 cases the foot clonus was present; in 8 cases examined through the microscope, he found degeneration of the spinal cord; in 2 cases this was confined to the posterior column. In the other cases there was combined disease of the posterior and postero-lateral columns, which was symmetrical on both sides. The grey substance was found to be normal. The anatomical examinations thus showed the analogy between pellagra and ergotism; but in the former the posterior and postero-lateral columns were affected, while in the latter the posterior columns alone had undergone degenerative change. On the nature of the toxic substance, Tuczek gives no opinion; he quotes the observation of Neusser—that pellagra is owing to a toxic substance contained in spoiled maize, and which is matured in the intestinal canal.

In the discussion which followed upon the reading of Dr. Tuczek's paper, Dr. Leppmann quoted the observations of Venturi, who found in the blood of pellagrous patients a microbe like that stated to have been found in lepra.

Dr. Tuczek has undertaken the articles on Pellagra, Ergotismus, and Lathyrismus, in the Dictionary of Psychological Medicine in preparation, to be published by Messrs. Churchill (*Journ. of Ment. Science*, from German journals).

Acromegaly.—*Brain*, for July, 1889, contains Pierre Marie's observations on this strange disease, in which the most prominent symptom is a striking non-congenital hypertrophy of the extremities (hands, feet, head), and therefore named by the author in 1885 "acromegaly," or "akromegalia" (from *ἄκρον*, extremity, and *μέγας*, large). The hands are enormous—like battledores, fingers sausage-shaped, nails flattened, widened, but cut short, and striated longitudinally, as well as sometimes curved upward when the palm is outstretched on a table. The arm, except the lower part, maintains its usual size. The feet are huge, with an enormous pad of tissue on the external border; the malleoli, head of fibula, and upper extremity of tibia are also increased in size, otherwise the leg does not greatly exceed the normal. The knees often appear prominent, in consequence of the enlargement of the patella and the condyles of the femur. The diameter of the thigh is unchanged. The cephalic extremity presents an increase in bulk most marked in prominent parts of the face, as the eyelids, nose, cheek-bones, and chin. The chin projects downward and forward, the lower jaw is increased in

size, the teeth being separated in consequence. The tongue is of enormous dimensions, its volume sometimes double the normal, but the shape is perfectly regular. The ears vary sometimes, being notably increased and often remaining unchanged. All the tissues undergo more or less marked alteration; the vertebræ are much hypertrophied. There is kyphosis, and a certain degree of scoliosis and lordosis. While the thyroid may be slightly hypertrophied it is never absent. The thorax appears flattened laterally, and prominent antero-posteriorly. The sternal region protrudes obliquely from above downward, and from behind forward, the xiphoid appendix being enormous, its free extremity projecting above the level of the sternum. Respiration seems to be especially diaphragmatic. There is a somewhat massive appearance of the pelvis. The joints are rather thick, sometimes nodose, often the seat of cracklings and pains more or less acute. The muscles, except in the cachectic state, are thoroughly well developed, muscular strength sometimes being above the average. Headache is present in the greater number of instances, sometimes of a severe character. Sight is often and most manifestly affected. In an advanced stage there is complete blindness, due to compression of the optic nerves by the enlargement of the pituitary body. Even when there is slight visual trouble the ophthalmoscope reveals indications of optic neuritis; hearing may be equally affected. The skin is generally flaccid, sometimes dry, but frequently presenting a yellow-brown discoloration, or a slightly olive hue, most marked on the eyelids; there may be vergettures or vibices, one case presenting a few pendulous growths of molluscum. The hair and beard are always thick and coarse. The increased size of the larynx may account for the depth and strength of voice. Some patients have an almost insatiable appetite and excessive thirst. Diabetes is a frequent accompaniment of acromegaly. There is an increase in the size of the heart, and a tendency to venous dilatations (varicose veins, hæmorrhoids). In women there is suppression of the menses, an early phenomenon from which the commencement of the disease may be dated. Psychological functions are most often well preserved, the good humour of the patients often contrasting grimly with their miserable condition. On the other hand intense melancholy may drive them to suicide.

The course of acromegaly is of long duration—ten, twenty, thirty years and more. Its onset seems to occur between the ages of twenty and twenty-six; concerning this point there is not suffi-

cient data. Confinement to bed precedes death by a few years, which, when it comes is unexpected, with indications of syncope. Acromegaly may possibly be confounded with Virchow's *leontiasis ossea*, *elephantiasis*, *mysœdema*, and Paget's *osteitis deformans*. Certain forms of *rachitis* also present an appearance similar to that of acromegaly; also *macrosomnia* and *Friedreich's disease*. A careful study of the history of each case will prevent confusion on this point.

IV. NEURO-THERAPEUTICS.

Suspension in the Treatment of Affections of the Spinal Cord.—In a recent paper on this subject, Dr. Alex. B. Shaw has given a good *résumé* of what has been done thus far in this field of neuro-therapeutics.

On the 15th of January, 1889, Prof. Charcot delivered a lecture at the Salpêtrière, in which he stated he had been recently experimenting with the suspension treatment of locomotor ataxia, and had been obtaining very remarkable results. Charcot's lecture was published in *Le Progrès Médical*, January 19th and February 23rd, 1889, in which he graphically described the technical details of suspension as practised by him with an ordinary Sayre's suspension apparatus. The fact that suspension is beneficial in the treatment of locomotor ataxia was discovered by Dr. Motschutkowsky, a Russian physician in 1883, while treating a patient for spinal curvature, who was then suffering from ataxic symptoms. He observed that amelioration of the symptoms followed the suspensions made during the applications of the plaster jacket used for the relief of the curvature, and subsequently suspended other ataxic patients with like favourable results. This important discovery was chronicled and published in a *brochure* on the subject by Dr. Motschutkowsky, in 1883, in which considerable improvement was ascribed to it in twelve tabetic patients, also in various neurasthenias, independent of tabes, in which the sexual functions were established by this treatment; but until quite recently it has been barren of results. The author further states, from the records, that suspension in cord affections occurring secondarily to disease of the vertebræ was advocated and practised with good results so long ago as 1826 by Prof. J. K. Mitchell, of the Jefferson Medical College, and has been employed for a number of years by Dr. S. Weir Mitchell in the same class of cases. The latter, indeed, about the time of Motschutkowsky's discovery, was in-

oil of sandal-wood in the wash-bottle, and was greatly pleased with it. "Says the smell of the sandal-wood is strangely familiar to him. Can't account for it." Again it is the author who writes:—"A mixture of two parts of syrup of tar and one part of syrup of Virginian prune is an ideal mixture. In its presence Maraschino, Curaçoa, and even green Chartreuse, naturally take a back seat."

But though light in style the lightness never extends into proximity, and the author has compressed a large amount of useful matter into a very small space. Each chapter being devoted to a single remedy, renders reference easy. The reader cannot fail to get help in a class of cases which, though troublesome, are often very curable.

RECENT WORKS ON NURSING.

1. *A Manual of Nursing: Medical and Surgical.* By LAURENCE HUMPHRY, M.B. Illustrated. Pp. 242. London: Charles Griffin & Co. 1889.
2. *A Manual of Nursing, Medical and Surgical.* By CHARLES J. CULLINGWORTH, M.D. Third Edition, revised. Illustrated. Pp. 190. London: J. & A. Churchill. 1889.

1. IN Dr. Humphry's book the title might, with resulting precision, be extended into "A Condensed Encyclopædia of Anatomy, Medicine, Surgery, Obstetrics, and Nursing."

The general plan of the human body is sketched in 18 pages; then each part of the body is rapidly described in detail, with the symptoms and treatment of diseases. Fevers, disease in children, wounds, fractures, operations, the management of child-bed, each has a chapter—this part of the book extends to 186 pages.

The General Management of the Sick Room in private houses is dismissed in 13 pages, and Nursing Appliances in 20 pages: whilst Bandaging, Antiseptic Dressings, Artificial Respiration, Bathing, and Massage are dealt with in 13 pages, and Cookery for invalids is only afforded 4 pages.

The lectures as delivered were probably of use, but in book form their tendency would be to make women amateur doctors rather than professional nurses.

2. Dr. Cullingworth's manual may be placed in the hands of nurses, with safety and advantage. It deals thoroughly with nursing, and omits all anatomical and medical details which are

not necessary in order to enable a nurse to do her work intelligently and efficiently.

Of course there are points in which it is easy to differ from the author. For instance, he recommends ori-nasal respirators as having "the great advantage of rendering it unnecessary to adopt any particular mode of breathing—the patient may breath through mouth or nose at will." Most physicians would prefer that the nose should be selected as the inhalant aperture, and exhaling into and inhaling through the same pad, even if that pad be impregnated with some volatile antiseptic, is needlessly causing the re-breathing of respired air, with the consequent risk of auto-infection.

Again, the author advises a large pin for splitting ice—a fine needle, with its eye-end stuck into a cork, is a much better tool.

On the whole, the book deserves to be in its third edition, and may with benefit to the nursed run through many more.

The Flowering Plant, as Illustrating the First Principles of Botany.

By J. R. AINSWORTH DAVIS, B.A. (Camb.). London: Charles Griffin & Co. 1890. Pp. 181. Illustrations, 61.

THIS book is specially intended as a handbook for London Matriculation, South Kensington, and University local examinations in elementary botany, but will be found a capital handbook for those reading for any ordinary examination in botany. The author has carried out his work most carefully, and has presented the important structural and physiological points together in an interesting and striking manner.

There is great need of a glossary; technical words are often once very briefly explained in the text, and then used without any further explanation.

A bibliography also is required. Anatomy, Histology, and Physiology occupy only three pages of the appendix of practical work, the directions for cutting, staining, &c., being very scanty, and the student receiving no advice on the subject of the permanent mounting of objects. Reference to some book dealing more fully with the matter is necessary if the author wishes to encourage practical work.

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

(Continued from page 256.)

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Pathology of General Paresis.—At the meeting of the Naturhistorisch-medicinisches Verein, at Heidelberg, Nov. 6, 1888, Buchholz read a paper on this subject. He found a very abundant production of new blood-vessels in the cerebral cortex. This was most easily demonstrated by preparing the specimens with osmic acid, after Exner's method. In such preparations the new vessels could be readily seen in all stages of development.

The production of spider cells, which has been supposed by some to be an early stage of the formation of new vessels, he considers to be an independent process. Their connections are with the lymph sheaths of the vessels, not with their endothelium. In this view he is supported by Bevan Lewis, who, in his recent Text-book of Mental Diseases, describes the increase in these spider or "scavenger" cells, as he terms them, as due to a morbid condition of the lymphatic apparatus of the cortex, of which these cells are an element.

Signs of Degeneration.—Metzger (*Allgem. Zeitsch. f. Psych.* XLV., 5 and 6). This article was suggested by a medico-legal case. A girl twelve years of age robbed a child three years old of her ear-rings, and killed her by throwing her from a window. At her trial before the Criminal Court in Berlin the defence was raised that the accused was deficient in moral sense, and therefore not accountable for her actions. The court condemned her to eight years' imprisonment, holding, contrary to the opinion of the medical expert, that she fully understood the criminality of her act. On appeal the decision was confirmed, the Court holding

that absence of any feeling of moral accountability was not ground for acquittal, unless due to unconsciousness or a morbid condition. The author finds no evidence that the accused was examined with special reference to physical signs of degeneration, which he considers a serious neglect. After quoting freely from authorities on this point, he gives the results of an examination of 157 insane patients and 223 school children, from nine to sixteen years of age, with reference to malformations of the ear, palate, and teeth. Of the 157 insane persons 23 presented malformations of the palate and teeth alone, 15 of the ears alone, and 59 of the palate, teeth, and ears together, making in all 97, or 61 per cent. In 62 cases there was hereditary predisposition; of these 44, or 71 cent., presented some or all these signs of degeneration. Of the 223 school children 21 had malformations of the teeth and palate, 30 of the ears, and 59 of teeth, palate, and ears—a total of 110, or 49 per cent. In 73 of the children examined the family history was unfavourable; of these 61, or 83·5 per cent., presented signs of degeneration, while they were found only in 18 of 29 cases in which the facts in regard to heredity could not be ascertained, and in 30 of 121 cases in which there was a good family history.

At the meeting of the British Medical Association in Leeds, in August last, Dr. Francis Warner presented to the Section of Psychology the Report of the Committee appointed at the meeting of the Association in Glasgow to investigate the average development and condition of brain function among the children in primary schools. Owing to the refusal of the London School Board to allow the Committee to visit their schools, they had been compelled to confine their observations to other elementary schools in London. They examined ten public elementary schools and two certified industrial schools, containing at the time of the visits 5,344 children. The Committee took notes in 809 cases, which were divided as follows:—351 showed signs of nervousness, nerve weakness or defect, 184 in which nutrition appeared to be defective, 231 in which mental dulness was reported or observed, 231 cases presenting cranial abnormalities, and 149 with diseases or defect of eyes. The different cranial abnormalities were found to be probably due to rickets in some cases, and in others they were head-large (cause not known), head-small, dolichocephalic, or scaphocephalic, forehead narrow or shallow, not included in other groups, bosses on frontal bone, or at fontanelle, not included in other groups, and other cranial characters not in other groups. The various signs of

nervousness observed were—nervous hand, weak hand, lordosis, frontals overacting, orbicular muscles of eyelid toneless, and finger-twitches. The chief forms of diseased or defective eyes were—squint, hypermetropia, myopia, disease of cornea, disease of lids, cataract, eye lost, and nystagmus.

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developed it wants the paroxysmal character. Huntingdon, who read a paper before the Academy of Medicine at Middleport, Ohio, in 1872, was the first to draw attention to the disease. He stated that he had seen a peculiar form of chorea in Long Island, which was hereditary, incurable, likely to be complicated with insanity, and which never occurred before thirty years of age. Two choreic families are reported by Dr. Wharton Sinkler, in which there were 11 males and 15 females, in a total of 26 cases, so that sex exerts little influence on the disease. The character of the movements is markedly like ordinary chorea, but they are not so violent; and the knee-jerk in the form of chorea under consideration is exaggerated, instead of being lessened or absent. No autopsies have been made which throw any light on the pathological anatomy of the disease, but the mental complications, and the persistent and gradually increasing movements, point to some structural disease of the brain. Treatment by medicines seems to be of little use; our attention should be directed to preventing the onset of the disease. When the age at which the patients are likely to develop the disease approaches, they should be placed under such hygienic conditions as will guard against excitement and mental strain.

Insanity produced by Ergotism.—Dr. Franz Tuzek, of the Marburg Asylum, has studied the pathological conditions found in the nervous system in certain cases where mental derangement followed as a sequela to ergotism. Seven years ago an epidemic of spasmodic ergotism occurred in Hesse. Anxious to know the durable results of the intoxication following the mixture of ergot in the rye-bread eaten by those affected, Dr. Tuzek has tried to keep his former patients in sight, and reports that of the 29 patients treated for ergotism in the Marburg Asylum, 9 are now dead; of the 20 survivors Dr. Tuzek was able, in 1886, to examine 15. Of the remaining 5, 4—so far as he could learn—were free from any appearance of the disease, and the condition of one was doubtful. In those examined relapses of convulsions were frequent; 2 patients still suffer from epilepsy. Most of them have still defects of the intelligence, and are under the mental average of the normal population. Only 3 are quite sane in mind, and these 3 are the only ones in which the knee clonus returned. In one case it came back in one knee, in the other two it returned in both. There were no remaining disorders of sensibility, reaction of the pupil, or ataxia. More than half the patients still suffer from headache;

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF MEDICINE.

President—LOMBE ATTHILL, M.D.; President of the King and Queen's
College of Physicians.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, February 23, 1890.

The PRESIDENT in the Chair.

Exhibitions.

MR. R. O'CALLAGHAN exhibited three patients whom he had treated by abdominal section, with flushing of the peritoneum, for tubercular peritonitis.

The Influenza Epidemic of 1889-90, as observed in Dublin.

DR. J. W. MOORE read a paper on the above subject. [It will be found at page 300.]

A Fever like Influenza, or Dengue, observed at Kells.

DR. RINGWOOD read a paper on Dengue Fever, which, he stated, had been endemic in the neighbourhood of Kells for the last five years, the disease having appeared soon after the return of our troops from Egypt. The character of the disease for the first six months was that of bilious relapsing fever, of so virulent a type that six of the cases observed by him were exactly similar to the cases of yellow fever which occurred in Dublin in 1826, and were then described by Dr. Stokes and Dr. Graves.

At the last Dublin meeting of the British Medical Association, 1887, Dr. Ringwood read a paper on the history of this bilious relapsing fever,

as observed by him during the first half of the year 1885, and to this paper he made frequent references. It was not till June, 1885, that he met with cases of pure dengue fever, six months having elapsed after the introduction of the disease into the neighbourhood before it assumed its real type of pure dengue—exactly a similar time as had elapsed on board H.M.S. “*Agamemnon*,” stationed at Zanzibar, in 1880–89, no case of pure dengue having appeared on board till six months after the introduction of the disease, 170 of the crew having in the meantime suffered from bilious fever, before the appearance of the dengue eruption.

Dr. Ringwood described a typical case, dividing the fever into three stages—the whole duration of illness averaging eight days. The first stage was ushered in, after an incubation period of four days, by sudden seizure, intense vertigo, stiffness of hands and feet, rapidly spreading to muscles of limbs and trunk; intense headache and agonising pains in muscles and bones—hence the American name of “*Break-bone Fever*”—nausea, great prostration (physical and mental), tongue coated, and covered with yellow slime; great thirst, anorexia, rapid or slow pulse, and temperature ranging from 101° to 104° in twenty-four hours; eyes sore, cheeks puffy and swollen, and soon covered with pathognomonic red triangular patch on each cheek, the apex of each triangle meeting on bridge of nose; joints now swollen and painful; cystitis with frequent micturition; abdominal muscles hard, and bowels obstinately confined. On third night crisis, with profuse, foul-smelling, drenching perspiration; rapid fall of temperature to subnormal, 96° ; pains and fever apparently gone; patient eager to be up and about. In forty-eight hours a relapse, with return of fever; eyes smarting, and rash starting at forehead and rapidly spreading over body, the rash varying in appearance—sometimes resembling scarlatina, measles, urticaria, or erysipelas, and, in cases of frequent relapse, a different eruption in each relapse; tremulous spasms of muscles of hands, with intense neuralgic and spinal pains; sore mouth and throat, with spasmodic difficulty of swallowing and upward spasm of diaphragm, with tingling, burning, and itching of skin, which added greatly to the patient's suffering during the third stage, which generally lasted two and a half days, when desquamation rapidly set in, followed by slow and interrupted convalescence. Dr. Ringwood exhibited temperature charts and drew special attention to the pulse and respiratory rate and the subnormal temperature during febrile remission. Dr. Ringwood, in his paper, reported a large number of complications as having been observed by him in cases of dengue during the last five years, and laid special stress on the cardiac oppression, tendency to vertigo and syncope, enlargement of glands in neck, desquamation of mucous membrane of tongue, throat, and alimentary tract, which gave rise to troublesome complications, according to the portion of the mucous tract principally involved. He referred to the complications seen in the

genito-urinary systems of both sexes, and showed the analogy between Cowper's glands and vesicles in males, and the uterus, Fallopian tubes, and ovaries in females, by the presence of urethritis and orchitis in the one sex, and hysteritis, pyosalpinx, and ovarian inflammation in the other sex. Dr. Ringwood stated that abortion never occurred in those attacked by pure dengue. He also mentioned diphtheria, multiple abscess, phlebitis, phlegmasia dolens, followed in one case by gangrene of the foot; frequent pulmonary complications; also herpes in every form and situation. Dr. Ringwood affirmed that cats, dogs, and horses were very susceptible to the contagion, and when affected became centres for the diffusion of the disease. He quoted instances to prove that nearly every yellow fever epidemic was followed by widespread outbreaks of dengue, and that when dengue was widely spread over tropical climes influenza invariably visited Europe. He held that the present form of influenza was a very mild form of dengue, generally free from eruption.

The limits of his paper prevented his referring to treatment, except to say that he had found the best results were obtained by the free use of pure salicin.

The PRESIDENT suggested, as questions for discussion, whether the disease which had been described by Dr. J. W. Moore was a specific and contagious disease, or, as was held by some, merely an ordinary inflammatory cold, very common at the time; and also whether the cases described by Dr. Ringwood were of the same disease which prevailed in Dublin, or of an entirely different and specific disease.

DR. FINNY did not think that Dr. Ringwood had thoroughly proved his point as to the identity of the disease in Kells with that in Dublin. Having seen the lady referred to, in consultation with Dr. Ringwood, he had to acknowledge that he had never met with a similar case. The variations of the fever presented remarkable phenomena, the temperature in the same day running from 97° in two hours up to 105° Fahr., which was reached between 11 and 12 o'clock, noon, and in the evening it was down to normal. The lungs were largely affected with patches of pneumonic complication. It was noteworthy that a lapdog suffered too, having a discharge from the nose, thus showing that the disease affected the lower animals.

DR. M'SWINEY had met with cases of influenza characterised by frequent desire to urinate in large quantity, somewhat as in hysteria; also by fainting, epistaxis, pain in the frontal sinuses, followed by a discharge of pus; and, in the recovery stage, by diaphoresis.

DR. A. W. FOOT said the term "influenza," whatever it meant, had been dragged in by the neck and shoulders as a *deus ex machina* to explain, in the case of the first paper, diseases with the old-fashioned names of "feverish cold," "heavy cold," as distinguished from "light," "rheumatic

cold," or other forms of ordinary catarrh; and, in the case of Dr. Ringwood's paper, anomalous forms of eruptive fever. He entered the room with but slight respect for influenza; yet when he heard cholera and yellow fever mentioned in the same breath, all that was requisite to make him a perfect convert to its importance was to give it a spice of hydrophobia. But then there was the high death-rate in Dublin recorded by the Registrar-General. Man, woman, and child, horse, dog, and cat, had suffered, and the weary, over-worked dispensary doctor made the shortest diagnosis, and put down "influenza." Hence the alarming statistics. He preferred to rely on observations in hospital practice rather than on those in private. Hilton Fagge was entirely against the miasmatic origin of influenza, using the word "miasmatic" as telluric. The prevalence of influenza in every climate, torrid and temperate; in every soil, dry and moist; in high elevations and lowlands; and in fleets on the ocean, showed that it had no miasmatic or telluric origin. As regards treatment, he had not heard any recommendation of rum punch, which he had known to cure many cases.

DR. C. J. NIXON said Dr. Foot's remarks implied a complete disbelief in the existence of influenza as an epidemic, especially occurring at the present time. He required proof where probability only was to be had. But there was one important fact that, according to the returns of the Registrar-General, in Paris the deaths for the last week of December, 1888, amounted to 955, while for the last week of December 1889, the deaths were 2,374; and again, taking the first week of January, 1889, the deaths were 970, while in the first week of January of the present year the deaths were 2,683. There must surely be some very unusual conditions to produce such a striking increase in the number of deaths. He considered the questions presented were these:—(1) Whether the recent epidemic resembled in character the epidemics recorded in bygone years; (2) what relation the epidemic had to dengue; (3) what modification the epidemic of influenza had upon various diseases and diseased conditions; and (4) what was its probable origin. So far as he knew from the literature of the subject, the cases which came under his observation in the epidemic of 1890 did not differ from the cases of influenza recorded by De Lorme, Graves, and others. He preferred De Lorme's classification to Dr. Moore's—namely (1) the simple catarrhal type or the ordinary feverish cold; (2) the catarrhal type complicated with severe pulmonary symptoms, especially pneumonic in character; (3) the gastro-intestinal type, where it affected the stomach and intestines; and (4) the rheumatoid type, of which the prominent symptoms were an absence of catarrh, but an extreme amount of pain, headache, pain under the eyes, down the back and limbs, and in the joints. He was himself connected with a Training College for females, in which, out of a population of 150, there were 66 cases of influenza, of which 22 were tabulated "catarrh," some

mild and some with pulmonary symptoms; 4 in which diarrhoea was a prominent symptom, and altogether the condition of the patients was like that in mild enteric fever; 30 eminently rheumatoid in character, with severe pain in the limbs; and lastly, 12 that did not seem to be suffering from anything. In the Central Criminal Asylum, Dandrum, 1 out of every 6 of the male inmates and 1 out of every 8 females had influenza. As regards dengue, if it were analogous to influenza, it is remarkable that, though said to be present in the neighbourhood for five years, it did not spread beyond Kells? That was one difficulty. Moreover, as he had read of the disease, dengue was a rheumatoid form of tropical fever, attended with eruptions, running a definite course, and having a marked absence, as a rule, of catarrhal symptoms. Therefore he was unable to identify the disease described by Dr. Ringwood with influenza. As to the effect of influenza on other diseases, influenza seemed to be most fatal, not so much in old people, as in persons subject to chronic lung disease, especially winter attacks of bronchitis, asthma, and emphysema of the lungs—pneumonia, as a rule, developing with fatal result. In different diseases observed by him of late there was a marked tendency to gastric disturbance. As to the origin of influenza, within the last couple of centuries there had been epidemics of influenza about every twelve years; and probably the best answer to the question was that given in the "*Annales d'Hygiène*," that they really knew nothing about it. They did not know how it arose. It might be endemic in certain districts, and in the course of time, when the conditions of soil became favourable to its spread it became pandemic, just as a fire would consume every material as long as fuel existed in the presence of oxygen.

MR. J. BELLEW KELLY (Drogheda) felt disappointed at not having heard more as regards treatment. He had learned nothing that had not been on record for centuries, especially in connection with the epidemics of 1510 and 1743, whatever the name of the disease, whether *la grippe*, influenza, or dengue. Every form of disease of a febrile type was liable to all sorts of complications. He had had 300 cases of influenza, and in all these he had not treated one pregnant woman. As a common symptom there was a peculiar tongue—moist and white in the beginning, and in twenty-four hours turning to yellow. So long as the yellowish colour remained the case went on favourably; but when the tongue became dry, with a red patch in the centre, he looked out for complications. The temperature went up to 103°, and occasionally to 104°, where there was a complication of diarrhoea or lung disease. He had had but two deaths, one from typhoid supervening on influenza, and going on to congestion of the lungs, and the other in a patient who had chronic disease of the lungs, and, having recovered from the influenza, got congestion of the lungs.

MR. COX found that the respiratory dulness was out of proportion to the pulmonary mischief. The pulse became symptomatic—short, sharp.

and angry. He regarded influenza as a specific fever of two or three days' duration; and he did not believe in its infectiousness, while it seemed to be pandemic. As regards treatment, he found *digitalis* advantageous to the heart's action, and also gave quinine and Dover's powder; but he did not resort to antipyrin. He substituted brandy and coffee where necessary for the hot rum punch.

MR. TOBIN who was quartered in Madras in 1871-72, when dengue was prevalent, and having seen a great number of cases of it there, and some twenty or thirty cases of influenza in Dublin, was of opinion that there was very little likeness between the two, and he would never think of identifying one with the other.

MR. CROLY considered that in influenza the patients required active stimulation with plenty of brandy. In his cases he started with stimulants, kept up the stimulants, and finished off with stimulants.

DR. DONNELLY hoped to have learned something more than he had heard of the aetiology of the disease. During the seven weeks of the epidemic he had seen between 1,500 and 1,600 more patients than at the corresponding period for the past five years; and in 75 per cent. of these the illness began with marked rigor, headache, back ache, and rheumatoid pains that passed away only after a purgative. The temperature ran up to 103.4°, and in two or three days it came down to normal. Then there was a marked depression, followed by a persistent cough. The tongue at first was flabby, and white, and after a day or so became quite yellow, and afterwards grey. Not a single case died of influenza pure and simple; but in some patients with acute pulmonary troubles the result was fatal. A gargle of salicylate of sodium relieved the pharynx. Antipyrin seemed to relieve the head. After a purge he gave quinine. He had seen cases very like dengue of a mild type. Catarrhal symptoms in the beginning were rather the exception than the rule.

DR. J. W. MOORE, in reply, said that Dr. Hilton Fagge's view was that the organisms of influenza could not undergo multiplication and development anywhere except in the air itself; and that constituted the distinct theory of miasma; while Hirsch considered the virus of influenza was a miasma or fouling of the air. If influenza was not an epidemic, Dr. Foot had given no explanation of the excessive death-rate of January, 1890, which was certainly not due to the weather. The high death-rate in so mild a month was opposed to all accepted theories of the influence of the weather. Indeed in spite of the mild weather the death-rate exceeded that which was incidental to the intense cold of January, 1881. His classification was nearly the same as De Lorme's. He gave four classes—cardiac and pulmonary, gastric, febrile, rheumatoid, yet all of a febrile type. Dengue and influenza were absolutely and positively distinct. There was not a single case of dengue in Dublin, or he believed elsewhere in Ireland. It was an accepted doctrine that dengue was a

tropical or subtropical disease. No outbreak of true yellow fever could possibly occur in Ireland, for a temperature under 70° Fahr. was fatal to the disease. His theory of pseudo-incubation was—that the virus of the disease seemed to be hatched and multiplied in the open air, and then lodged on the persons of individuals, who acted as fomites of the disease. There was no evidence to show that the virus was multiplied and developed within the system.

DR. RINGWOOD also replied.—He said Stokes and Graves, two of the greatest authorities that ever lived, described exactly every symptom of yellow fever in cases occurring in Ireland in 1826—black vomit, blue and purple nose, rigid abdominal muscles and intussusception, and sudden death. Similar observations had been made by undoubted authorities in Scotland. But to set the question at rest as to the existence of dengue in Kells, he invited a deputation from the Section to come down, and he undertook to show forty cases under treatment.

DR. J. W. MOORE said, as regards the so-called yellow fever described by Graves and Stokes, it had since been shown by Trousseau and others that the disease which they called “yellow fever” was in some cases acute yellow atrophy of the liver, and in other cases that it was relapsing or famine fever (Murchison).

The Section then adjourned.

RELATIVE VALUES OF GERMICIDES.

DR. JOHN E. WEEKES, of New York, has devoted much attention to the determination of the comparative germicidal power of antiseptics, and has published the following list of “effective germicides ranged in the order of their value”:—Bichloride of mercury, chloride of lime (fresh), chlorinated soda (fresh), chlorine water (saturated), nitrate of silver, salicylic acid, creasote from birchwood (Merck), alcohol (absolute), carbolic acid, “Sanitas” oil, No. 1, “Sanitas” crude, potassium permanganate, bisulphate of mercury, “Sanitas” disinfecting fluid, creolin, trichlorophenol (in ether), hydrogen dioxide, aseptol, listerin, oil of eucalyptus globulus, iodoform and ether, balsam of Peru, oil of thyme, chloride of iron, tincture of the perchloride of iron, liquor of the perchloride of iron, iodide of silver, naphthalin in ether, oxynaphthoic acid, ichthyol, oil of cade, biniodide of mercury, oxycyanide of mercury, yellow oxide of mercury, red oxide of mercury, bromide of mercury, resorcin, β -naphthol, potassium hydrate, thallin, terebene, iodoform. Substances found not capable of destroying germs in 12 hours’ exposure are excluded from this list. The microbes on which the experiments were made were the *staphylococcus pyogenes aureus* and the *typhoid bacillus*. Dr. Weekes’ paper will be found in the *N. Y. Medical Record* of August 3rd, 1889.

CLINICAL RECORDS.

Notes on some Uncommon Forms of Skin Diseases. By R. GLASGOW PATTERSON, B.A., M.B., B.Ch., Dubl.; Surgeon to the Extern Department, St. Vincent's Hospital, Dublin.

I. HERPES IRIS OF TRUNK WITH HERPES SUPRA-ORBITALIS.

THE unusual association of herpes iris with herpes following the distribution of the supra-orbital branch of the frontal nerve, as well as the uncommon seat of the former, render the following case one of much interest, especially from an ætiological point of view.

J. C., aged five years and three months, an only child, was brought by his mother to St. Vincent's Hospital on account of a "rash" which had come out three days previously on parts of his face and body. The boy had no constitutional disturbance or pain, and complained only of the itching which accompanied each outbreak of spots. Over the left eye, and occupying the exit-point and course of the supra-orbital nerve, was a group of eight or nine vesicles about the size of split peas, covering an area of about the size of half-a-crown, and unaccompanied by any pain or redness. On stripping the body expecting to find zoster, I was astonished to find an eruption of totally different character. The spots were distributed over the chest and back, were not very numerous, and many seemed to have aborted, leaving only a slight trace of erythema behind. Two typical spots were seen—one just over the angle of the right scapula, and one in the lumbar region on the same side. There was a faint attempt at symmetry. Putting together the different stages observed, the following natural history of the disease became evident. The spot begins as a small central papule on a wide erythematous base. This is followed by a small conical vesicle, which, gradually spreading, involves more and more of the surrounding zone of redness. Umbilication of the vesicle now appears, followed by central scabbing and purplish discoloration, probably due to some hæmorrhage having taken place. At this stage the spot will have attained a size of about half to three-quarters of an inch in its largest diameter, and presents its most characteristic form—the central purple scab, the marginal vesicular ring, and the gradually fading red areola. These changes occupy from three to four days. About an equal period suffices for complete scabbing and separation, leaving a red scar which requires a little time to fade. The parts most affected were the upper part of the chest, the shoulders round

the root of the neck, and the loins; no spots occurred on the arms or legs. Rapid recovery followed, and four months later there has been no recurrence.

Herpes iris of the trunk is a very rare affection. It is classed by most modern writers under erythema, but its association in this case with undoubted herpes zoster seems to show the correctness of Dr. Colcott Fox's view in regarding it as an affection separate from the erythematous group of skin diseases, and allied to the truly bullous.

II. ERYTHEMA NODOSUM WITH INHERITED RHEUMATISM.

The connection of erythema nodosum with rheumatism is now universally recognised. The interest of the following case lies in the coincident development with the eruption of a latent inherited rheumatic diathesis.

Maggie W., aged fifteen, came to St. Vincent's Hospital on October 15th, 1889, complaining of sickness, general pains, principally in the joints, and loss of appetite. She had never been previously unwell, and attributed her illness to overwork at a sewing machine. No history of rheumatism in her family could be obtained. Her sickness began on the previous Friday, the 11th, when her knees became swollen and painful, could not do her work, and suffered from severe headache. On the following Monday the spots first appeared on the legs, and simultaneously the swelling of the knees subsided, though the painfulness on exertion still remained. One large spot, absolutely typical, occupied the centre of the right tibial crest, and around it were arranged several smaller satellites. Numerous small patches were also present on the left leg, and all were excessively tender to the touch. Aperients and sodium salicylate (gr. 20 four times daily) were ordered. Two days later the left leg was thickly studded over with bossy nodes, large in size and excessively tender, while those on the right leg were distinctly fading, and presented the usual variations of colour. The general pains had completely subsided under treatment, and the local condition was much relieved by a calamine and belladonna lotion. A week later she came back almost well, accompanied by her mother, from whom I was anxious to obtain particulars of the family history. The mother is a healthy looking woman, fifty-three years of age, who has suffered much from rheumatism, especially of late years. Both her hands show well-marked enlargements of the phalangeal and metacarpal joints, due to chronic rheumatic arthritis. Her knees are also enlarged and "creak." So typical was the appearance of the hands that she might have sat for a picture of Haygarth's "nodosities." She attributes the painful enlargements of her hands and knees to her work as a washerwoman and the prolonged standing it entails. Of late years she has been subject to frequent attacks of lumbago.

In a case of erythema nodosum which occurred with well-marked sub-acute articular rheumatism with effusion into the joints, and which was

recorded in *The Lancet*, July 31, 1886, I referred to the value of the salicylates in controlling the general and diffuse pains associated with the outbreak of the eruption, while, as might be expected, they exercise no effect on the local tenderness, which is mainly due to the increased tension caused by the circumscribed inflammation in the deeper parts of the skin. Cases of the kind occur so seldom that every observation is worthy of note; and in this action of the drug we might find, if further proof were needed, additional evidence of the close relationship which exists between this peculiar type of dermatitis and the rheumatic diathesis. A very complete summary of our knowledge of this subject has been given by Dr. Archibald Garrod in a recent volume of *St. Bartholomew's Hospital Reports*—that, namely, for 1888.

HOMŒOPATHY.

THE New York *Graphic* having recently gone out of its artistic way to inform its readers that "quite one-half of the medical practice of the world is governed by the philosophic discoveries of Hahnemann," the (N. Y.) *Medical Record* sets forth the facts as follows:—"In the United States there were, in 1885, twelve homœopathic and eighty-eight regular medical colleges, with 1,088 and 9,441 students respectively. At the most liberal estimate the homœopathic practitioners of this country form one-eighth of the total number. There is no homœopathic medical college in the country which can be said to be even fairly well equipped and endowed, as compared, for example, with the leading regular medical colleges of New York, Boston, and Philadelphia. The only school which really flourishes is in Chicago. The statement that 'homœopathy is a recognised branch in most of the great medical schools of Europe' is absolutely untrue. Homœopathy has no place whatever in any of the universities of Germany or France, nor has it a school of its own anywhere in Germany. There is a small homœopathic hospital of one hundred beds in London, with a small medical school attached. There are said to be only about 275 homœopathic physicians in Great Britain and Ireland. The number on the Continent is proportionably even less." According to the most recent official statistics in Austria, there are only 118 homœopathists out of the whole number of medical men, 7,183, and only 44 of these profess to practise homœopathy exclusively. There are none at all in the Italian districts, and only 19 in Vienna. The number also is said to be steadily decreasing.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.;
F. R. Met. Soc.; Diplomat in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, February 22, 1890.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.		Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.
Armagh -	31·0	15·5	25·8	15·5	Limerick -	44·5	40·5	52·6	31·0
Belfast -	54·6	58·6	48·7	44·9	Lisburn -	24·2	33·8	24·2	14·5
Cork -	24·7	33·7	46·1	35·7	Londonderry	51·7	41·0	33·9	25·0
Drogheda	42·3	29·6	38·1	29·6	Lurgan -	35·9	51·3	10·8	30·8
Dublin -	42·7	32·2	37·4	33·7	Newry -	7·0	14·0	21·1	24·6
Dundalk -	21·8	8·7	17·5	34·9	Sligo -	19·2	28·9	19·2	19·2
Galway -	30·3	53·8	73·9	50·4	Waterford -	25·5	11·6	16·2	71·8
Kilkenny	12·7	21·1	76·1	59·2	Wexford -	21·4	42·8	51·3	33·5

In the week ending Saturday, February 1, 1890, the mortality in twenty-eight large English towns, including London (in which the rate was 21·8), was equal to an average annual death-rate of 22·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·5 per 1,000. In Glasgow the rate was 24·4, and in Edinburgh it was 25·1.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 41·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·9 per 1,000, the rates varying from

* The Registrar of No. 1 District states—"Large death-rate due to fact that the Workhouse Officers were unable to register for past three weeks owing to attacks of influenza from which they suffered."

0.0 in nine of the districts to 14.3 in Londonderry. The 29 deaths from all causes registered in that district comprise 7 from whooping-cough and one from diarrhoea. Among the 243 deaths from all causes registered in Belfast are 21 from measles (being 3 under the number from that disease in the preceding week), 19 from whooping-cough (being an increase of 8 as compared with the number for the preceding week), 1 from diphtheria, 2 from enteric fever, and 6 from diarrhoea. The 38 deaths in Cork comprise 2 from diphtheria; and the 11 deaths in Waterford comprise 1 each from measles and diarrhoea. The Registrars of four Belfast Districts refer to the presence of influenza.

In the Dublin Registration District the births registered during the week amounted to 194—91 boys and 103 girls; and the deaths to 294—136 males and 158 females.

The deaths, which are 64 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 43.4 in every 1,000 of the estimated population. Omitting the deaths (5 in number) of persons admitted into public institutions from localities outside the district, the rate was 42.7 per 1,000. During the first five weeks of the current year the death-rate averaged 43.8, and was 10.6 over the mean rate in the corresponding period of the ten years 1880—89.

Twenty-nine deaths from zymotic diseases were registered, being equal to the average for the corresponding week of the last ten years, but 8 under the number for the week ended January 25. They comprise one from measles, one from scarlet fever (scarlatina), one from typhus, 6 from influenza (being 2 under the number of deaths from that disease in the preceding week), 9 from whooping-cough (being one under the number for the preceding week); 2 from diphtheria, 4 from enteric fever, one from diarrhoea, one from dysentery, &c. In 2 of the fatal cases of influenza the disease was complicated with bronchitis, in 3 with pneumonia, and in one with heart disease. Seven of the 9 deaths from whooping-cough occurred in North City No. 1 West (Langrishe-place) District.

Only 9 cases of enteric fever were admitted to hospital, being 3 under the admissions for the preceding week. Twenty-one enteric fever patients were discharged, 2 died, and 68 remained under treatment on Saturday, being 14 under the number in hospital on Saturday, January 25.

Five cases of typhus were admitted, against one case for the preceding week; 10 cases of the disease remained under treatment in hospital on Saturday.

No cases of scarlatina were admitted, and there were only 2 cases of measles received, against 10 for the preceding week and 9 for the week ended January 18.

Deaths from diseases of the respiratory system, which in each of the two weeks preceding amounted to 130, fell this week to 89, but this

number is 27 in excess of the average for the corresponding week of the last ten years: 64 of the 89 deaths were caused by bronchitis and 21 by pneumonia or inflammation of the lungs.

In the week ending Saturday, February 8, the mortality in twenty-eight large English towns, including London (in which the rate was 20·6), was equal to an average annual death-rate of 23·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·0 per 1,000. In Glasgow the rate was 24·9, and in Edinburgh it was 24·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 39·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·3 per 1,000, the rates varying from 0·0 in twelve of the districts to 12·1 in Belfast. The 261 deaths from all causes registered in that district comprise 26 from measles (being 5 over the number from that disease in the preceding week), 2 from scarlatina, 2 from typhus, 14 from whooping-cough (being a decrease of 5 as compared with the number for the preceding week), 1 from diphtheria, 5 from enteric fever, and 4 from diarrhoea. Among the 23 deaths in Londonderry are 6 from whooping-cough—a decrease of 1 as compared with the number from that disease in the preceding week. The Registrars of Belfast, Nos. 4 and 5 Districts, Cork, No. 4, Wexford, and Lisburn, Districts, refer to the presence of influenza.

In the Dublin Registration District the births registered during the week amounted to 207—105 boys and 102 girls; and the deaths to 226—105 males and 121 females.

The deaths, which are 68 under the number for the preceding week and 2 below the average for the sixth week of the last ten years, represent an annual rate of mortality of 33·4 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 32·2 per 1,000. During the first six weeks of the current year the death-rate averaged 42·1, and was 8·8 over the mean rate in the corresponding period of the ten years 1880-89.

The number of deaths from zymotic diseases registered is 22, being 7 under the number for the preceding week and 6 below the average for the sixth week of the last ten years. They comprise 2 from measles, 7 from influenza (being 1 over the number of deaths from that disease in the preceding week), 4 from whooping-cough, 6 from enteric fever, 1 from erysipelas, &c. In 2 of the fatal cases of influenza the disease was complicated with bronchitis, in 2 with congestion of the lungs, and in 2 with heart disease.

Nine cases of enteric fever were admitted to hospital, being equal to

the admissions for the preceding week. Six enteric fever patients were discharged, and 71 remained under treatment on Saturday, being 3 over the number in hospital on Saturday, February 1.

Seven cases of typhus were admitted to hospital, showing an increase of 2 as compared with the admissions for the preceding week; 15 cases of this disease remained under treatment in hospital on Saturday.

The hospital admissions for the week include also 8 cases of measles against 2 for the preceding week and 10 for the week ended January 25. Nineteen cases of the disease remained under treatment in hospital on Saturday.

There has been a further decline in the mortality from diseases of the respiratory system, the number of deaths being 56, or 33 under the number for the preceding week, 74 under that for the week ended January 25, and 3 below the average for the sixth week of the last ten years. The 56 deaths comprise 36 from bronchitis, 13 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, February 15, the mortality in twenty-eight large English towns, including London (in which the rate was 21·3), was equal to an average annual death-rate of 25·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 28·7 per 1,000. In Glasgow the rate was 32·5, and in Edinburgh it was 23·2.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 41·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·4 per 1,000, the rates varying from 0·0 in ten of the districts to 12·3 in Belfast. The 217 deaths from all causes registered in that district comprise 36 from measles (being 10 over the number from that disease in the preceding week), 1 from typhus, 13 from whooping-cough (being a decrease of 1 as compared with the number for the preceding week), 1 from diphtheria, 3 from enteric fever, and 1 from diarrhoea. Among the 19 deaths in Londonderry are 3 from whooping-cough (a decrease of 3 as compared with the number from that disease in the preceding week), 1 from enteric fever, and 1 from diarrhoea. The Registrars of Belfast, Nos. 3 and 4 Districts, and the Registrar of Sligo, No. 1 District, refer to the presence of influenza.

In the Dublin Registration District the births registered during the week amounted to 175—101 boys and 74 girls; and the deaths to 256—126 males and 130 females.

The deaths, which are 33 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of

37·8 in every 1,000 of the estimated population. Omitting the deaths (3 in number) of persons admitted into public institutions from localities outside the district, the rate was 37·4 per 1,000. During the first seven weeks of the current year the death-rate averaged 41·5, and was 8·2 over the mean rate in the corresponding period of the ten years 1880-89.

Twenty-four deaths from zymotic diseases were registered, being 2 over the number for the preceding week, but 3 below the average for the week ended February 8. They comprise 5 from measles, 7 from influenza (being equal to the number from that disease for the preceding week), 1 from whooping-cough, 5 from enteric fever, 1 from diarrhoea, &c.

Ten cases of enteric fever were admitted to hospital, being 1 over the admissions for the preceding week. Seventeen enteric fever patients were discharged, 2 died, and 62 remained under treatment on Saturday, being 9 under the number in hospital on Saturday, February 8.

Only 2 cases of typhus were admitted against 7 for the preceding week; 17 cases of the disease remained under treatment in hospital on Saturday.

The number of cases of measles admitted, which had risen from 2 in the week ended February 1, to 8 in the following week, fell to 5. Fourteen cases of the disease remained under treatment in hospital on Saturday.

Seventy-one deaths from diseases of the respiratory system were registered, being 12 in excess of the average for the corresponding week of the last ten years, and 15 over the number for the week ended February 8, but 18 under the number for the week ended February 1. They comprise 52 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 22, the mortality in twenty-eight large English towns, including London (in which the rate was 21·8), was equal to an average annual death-rate of 25·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 28·3 per 1,000. In Glasgow the rate was 31·8, and in Edinburgh it was 24·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 37·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·9 per 1,000, the rates varying from 0·0 in eight of the districts to 13·2 in Belfast. The 200 deaths from all causes registered in Belfast comprise 29 from measles (being 7 under the number from that disease in the preceding week) 18 from whooping-cough (being an increase of 5 as compared with the number for the preceding week), 1 from diphtheria, 1 from simple-continued fever, 6 from enteric fever, and 4 from diarrhoea. Among the 8 deaths from all

causes registered in Dundalk are 3 from measles. The Registrars of the following Districts, viz.:—Belfast No. 2, Londonderry No. 1, Glendermot (Londonderry), and Waterford No. 1, refer to the presence of influenza.

In the Dublin Registration District the births registered during the week amounted to 198—100 boys and 98 girls; and the deaths to 239—109 males and 130 females.

The deaths, which are 20 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 35·3 in every 1,000 of the estimated population. Omitting the deaths (11 in number) of persons admitted into public institutions from localities outside the district, the rate was 33·7 per 1,000. During the first eight weeks of the current year the death-rate averaged 40·7, and was 7·5 over the mean rate in the corresponding period of the ten years 1880–89.

The number of deaths from zymotic diseases registered is 21, being 5 below the average for the corresponding week of the last ten years, and 3 under the number for the week ended February 15. They comprise 3 from measles, 2 from influenza (being 5 under the number from that disease in the preceding week), 4 from whooping-cough, 6 from enteric fever, 1 from diarrhoea, &c.

Eleven cases of enteric fever were admitted to hospital, being 1 over the admissions for the preceding week. Fifteen enteric fever patients were discharged, 7 died, and 51 remained under treatment on Saturday, being 11 under the number in hospital on Saturday, February 15.

Seven cases of typhus were admitted to hospital, being 5 over the admissions for the preceding week and equal to the number for the week ended February 8. Twenty-one cases of the disease remained under treatment in hospital on Saturday.

Only 3 cases of measles were admitted against 5 in the preceding week and 8 in the week ended February 8. There were only 9 cases of the disease in hospital on Saturday.

Seventy-four deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week and 18 over the average for the eighth week of the last ten years. They comprise 44 from bronchitis, 20 from pneumonia or inflammation of the lungs, 3 from croup, and 2 from pleurisy.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of February, 1890.*

Mean Height of Barometer,	-	-	-	30.204 inches.
Maximal Height of Barometer (on 23rd, at 11 a.m.),				30.744 "
Minimal Height of Barometer (on 16th, at 9 a.m.),				29.539 "
Mean Dry-bulb Temperature,	-	-	-	40.8°.
Mean Wet-bulb Temperature,	-	-	-	38.9°.
Mean Dew-point Temperature,	-	-	-	36.5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			.218 inch.
Mean Humidity,	-	-	-	85.4 per cent.
Highest Temperature in Shade (on 1st),	-			52.5°.
Lowest Temperature in Shade (on 16th),	-			27.9°.
Lowest Temperature on Grass (Radiation) on 8th and 14th),	-	-	-	25.0°.
Mean Amount of Cloud,	-	-	-	72.3 per cent.
Rainfall (on 7 days),	-	-	-	.802 inch.
Greatest Daily Rainfall (on 16th),	-			.278 inch.
General Directions of Wind,	-	-	-	S.E., E.

Remarks.

This month was remarkable for the contrast it afforded to January. South-easterly and easterly winds, quiet, chiefly fine weather, frequent fogs, and low temperature took the place of the blustering south-westerly gales, heavy and frequent rains, and high, unsteady temperature of the preceding month. The mean atmospherical pressure was nearly half an inch (.464 inch) above that of January, while the mean temperature was 3° below that of January.

In most particulars, February, 1890, may be regarded as a favourable month, but the amount of cloud—72.3 per cent.—was much in excess of the average, 66.0 per cent., and gave rather a gloomy aspect to the season, which was also notable for its foggy character.

In Dublin the mean temperature (41.5°) was 1.2° below the average (42.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 40.8°. In the twenty-five years ending with 1889, February was coldest in 1873 (M. T. = 37.9°), and warmest in 1869 (M. T. = 46.7°). In 1886 the M. T. was 39.7°. In the year 1879 (the cold year) it was 40.1°. In 1888 it was as low as 38.6°, and in 1889 it was 40.3°.

The mean height of the barometer was 30.204 inches, or 0.342 inch above the average value for February—namely, 29.862 inches. The mercury rose to 30.744 inches at 11 a.m. of the 23rd, and fell to 29.539 inches at 9 a.m. of the 16th. The observed range of atmospherical pressure was, therefore, 1.205 inches—that is, a little over one inch and

two-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $40\cdot8^{\circ}$, or $3\cdot3^{\circ}$ below the value for January, 1890. Using the formula, *Mean Temp.* = *min.* + (*max.* - *min.* \times $\cdot 50$), the value becomes $41\cdot5^{\circ}$, compared with a twenty-five years' average of $42\cdot7^{\circ}$. On the 1st the thermometer in the screen rose to $52\cdot5^{\circ}$ —wind W.S.W.; on the 16th the temperature fell to $27\cdot9^{\circ}$ —wind calm. The minimum on the grass was $25\cdot0^{\circ}$ on the 8th and 14th.

The rainfall was only $\cdot 802$ inch, distributed over 7 days. The average rainfall for February in the twenty-five years, 1865–89, inclusive, was $2\cdot150$ inches, and the average number of rainy days was $17\cdot2$. The rainfall and the rainy days, therefore, were both considerably below the average. In 1883 the rainfall in February was large— $3\cdot752$ inches on 17 days; in 1879, also, $3\cdot706$ inches fell on 23 days. On the other hand, in 1873, only $\cdot 925$ of an inch was measured on but 8 days; and in 1887 only $\cdot 541$ inch of rain fell on 11 days. The rainfall in 1887 was much the smallest recorded in February for very many years.

Snow or sleet fell on the 18th and 28th. Hail fell on the 27th. The atmosphere was foggy on as many as 10 days, namely—the 5th, 6th, 8th, 14th, 15th, 16th, 21st, 22nd, 23rd, and 25th. High winds were noted on 6 days, reaching the force of a gale on only one day—the 12th. The temperature exceeded 50° in the screen on but 2 days, compared with as many as 17 days in January, and with 8 days in February, 1889; while it fell to or below 32° in the screen on 5 days, compared with only 1 day in January, but with 4 in February, 1889. The minima on the grass were 32° , or less, on 18 nights, compared with 15 nights in January and 21 nights in February, 1889. On 2 days the thermometer did not rise above 40° in the screen.

Fine, quiet, cool weather held almost throughout the first week (1st–8th). The barometer was generally high in central Europe, England and Ireland; low in the extreme north, and relatively low over the Mediterranean and neighbouring countries. Strong S.W. to N.W. winds prevailed to the northward, moderate easterly breezes to the southward, while in the central zone between the northern and southern areas of low pressure, calms and very variable airs were observed, with fogs and frosts at times. Except on the west coast of Norway, the precipitation was small during the week. In Dublin the mean height of the barometer was $30\cdot340$ inches. The mean dry bulb temperature at 9 a.m. and 9 p.m. was $40\cdot0^{\circ}$. The corrected mean temperature, deduced from the daily extremes in the shade, was $41\cdot0^{\circ}$. Rain fell in appreciable amount on only one day, the quantity measured being but $\cdot 010$ inch (on Tuesday). At Christiansund, in Norway, on the contrary, the rainfall for the week up to 8 a.m. of Saturday amounted to $2\cdot33$ inches and was distributed over six days. Sharp frosts occurred over central Ireland on

Wednesday and Saturday, the 5th and 8th, the lowest readings in the screen at Parsonstown being 25° and 23° respectively on the mornings of those days.

During the week ended Saturday, the 15th, the weather was throughout cold. Until the 14th it was very dry, with fresh, or strong searching south-easterly winds and much cloud. On that day a considerable fall of cold rain occurred, and Saturday proved bitterly cold, with a westerly wind and a vapour fog. During the greater part of the week an anticyclone, in the centre of which the barometer at one time stood above 30.6 inches, lay over the North Sea, Scandinavia, and the Baltic. It was to this system that the searching S.E. winds of the period owed their origin. On Tuesday the barometer fell decidedly, as a depression approached the S.W. of England from the Atlantic. This disturbance caused very heavy rain in Cork—5.5 inch being measured on Wednesday, and 1.55 inches on Thursday, at Roche's Point, near Queenstown. On Saturday the barometer again fell, while the wind became westerly or north-westerly with fog and a low temperature. In parts of England a good deal of snow fell. In Dublin the mean height of the barometer was 29.935 inches. The corrected mean temperature was 38.9° ; the mean dry bulb readings at 9 a.m. and 9 p.m. were 38.4° . Rain fell to the amount of .099 inch on Friday.

Very damp, changeable, dull weather prevailed during the greater part of the third week, which began in Dublin with a dense vapour fog and a very low temperature— 27.9° in the screen. Until Saturday, the 22nd, a vast anticyclone lay over the north-east of Europe, while the barometer was low over the Atlantic to the south-westward of the British Islands. Consequently, easterly to southerly winds prevailed, accompanied by frost on the Continent; low temperature, cloudy skies, and gloom or fog in Great Britain; and a mild, damp atmosphere, with frequent rain, in Ireland. On Saturday, however, the barometer rose fast in this country, as a new area of high pressure formed over Western Europe, and the week closed with a promise of quiet, cold weather. In Dublin the mean height of the barometer was 30.022 inches. The mean temperature was 43.2° ; the mean dry-bulb temperature at 9 a.m. and 9 p.m. was 42.6° . Rain was measured on three days, the total downfall being .520 inch, of which .278 inch was caught on Sunday and .162 inch on Monday. The week began and ended with a dense vapour fog.

In the closing period of the month, from the 23rd to the 28th inclusive, at first mild and cloudy, the weather afterwards became cold and dry, with very keen polar winds, and snow showers in Great Britain and Ireland. The barometer was high throughout in Ireland, while depressions passed in a south-easterly or southerly direction across Scandinavia, the Baltic, and Russia. Hence polar winds prevailed in Western Europe. On Sunday, the 23rd, an anticyclone stretched across England and Ireland, in which

countries the barometer stood at 30·70 inches or upward—at 8 a.m. the reading at Belmullet was 30·75 inches, at 11 a.m. that in Dublin was 30·744 inches. Gradients for northerly winds became more and more pronounced until Friday, the 28th, when a great current of polar air was flowing southwards all across Europe, and frost and snow were reported from most British and Continental stations, with a very dry searching air, particularly in Ireland. A solar and a lunar halo were seen on Friday, February 28.

The rainfall in Dublin during the two months ending February 28th has amounted to 3·777 inches on 28 days, compared with 4·662 inches on 36 days in 1889 and 2·344 inches on 23 days during the same period in 1888, and with a 25 years' average of 4·350 inches on 34·5 days.

At Greystones, Co. Wicklow, the rainfall in February, 1890, was 1·083 inches, distributed over 7 days. Of this quantity ·890 inch fell on the 16th. Since January 1st, 5·555 inches of rain have fallen at that station on 29 days.

PERISCOPE.

COMPETITIVE EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES.

The following papers were set at the examination held in February, 1890:—

Anatomy and Physiology (Sir Joseph Fayrer).—1. Describe the astragalus, its articulations, its relation to and connection with other parts; its structural peculiarities, and its development. Give an account also of the structure, chemical composition, and nutrition of bone. 2. Describe the origin, anatomical relations, distribution, and connections of the glosso-pharyngeal nerve, and its branches. 3. Describe the right lung; giving its anatomical relations, connections, and structure. Describe also the changes which take place in the air in respiration. 4. Describe the origin, course, distribution, and anatomical relations of the internal maxillary artery and its branches. 5. Describe the dissection by which you would expose Hunter's canal; giving an account of the parts and their anatomical relations which enter into its formation, or are contained within it.

Surgery (Mr. Pollock).—1. Describe the characteristics of the different varieties of curvature of the vertebral column, their pathology and treatment. 2. Give the symptoms of a case of internal strangulation of the small intestine; the most common causes of such an attack, and the treatment. 3. Describe the changes which usually take place during the progress of scrofulous disease of the knee-joint; and the treatment,

local and constitutional, in its various stages. 4. What causes give rise to blood in the urine? Describe the symptoms by which such causes may be diagnosed, and their treatment. 5. Give the symptoms of inherited syphilis; in infancy, in childhood, and in adult life, with the treatment, according to age and other circumstances. 6. Describe the surgical treatment of a case of empyema, in order to ensure, not only the removal of the fluid, but also the subsequent obliteration of the cavity in which it was contained. What are the necessary changes which must occur to effect this result?

Medicine (Sir William Aitken).—1. Case for commentary.—The patient was a delicate young woman aged eighteen, and two years married. In February, 1887, she experienced much pain in the bowels, being then in the fifth month of pregnancy. A few days later the pain moved to the left side of the chest. Dulness soon appeared. Early in March she was tapped, and about two pints of pus were withdrawn. No drainage-tube was used. A little later she was delivered of a still-born seven-months' child, and six weeks afterwards was admitted into hospital. 11th June.—Three days after admission an incision was made in the fifth space in the posterior-axillary line of left side. Between one and two pints of pus escaped; a drainage-tube was inserted, and antiseptic absorbent dressings were applied. During the whole illness the chest was not washed out. The patient improved considerably. The discharge of pus gradually ceased, the tube was withdrawn, and the wound healed soundly; but very soon the temperature began to rise again; she became hectic, and the cough returned. 17th July.—The wound was opened up afresh, and a larger drainage-tube inserted. 23rd July.—The discharge continues abundant and sweet; temperature is normal; cough ceased entirely from the 17th, the date of last opening of chest and insertion of drainage-tube. The pus gravitates to the bottom of pleural cavity, so that some of it remains, and does not escape till the patient leans over on the side. 29th July.—Patient had a rigor this morning, which lasted about three-quarters of an hour. Her temperature when the rigor commenced was 99·8° Fahr., and when it ceased was 101·8°; an hour later it was 103·8°, and two hours later 103°. 1st August.—Temperature in the evening 104·8°. 3rd August.—Temperature in the morning sub-normal, in the evening 101·4°. 8th August.—Temperature not above 100° since 3rd instant. Very slight discharge, scarcely soiling the chemise. 13th August.—Tube left out; wound nearly healed. At this time she complained of pain and aching in the right eye, without any apparent external cause. 14th August.—Blindness of right eye; she could only trace the movement of a hand before the face, but she could not count the fingers. 16th August.—Examination of fundus of eye with the ophthalmoscope showed paleness of the retina. There was total loss of the perception of light in the right eye, while the left remained unaffected.

Vision was slightly recovered in the right eye, but it was subsequently lost. There was no disease, valvular or other, of the heart. 5th September.—Total blindness of the right eye. The patient could not tell the position of the window or perceive the light from the mirror of the ophthalmoscope when thrown into the eye. The pupil was dilated and insensible to light, but moved in sympathy with the left eye when that remained uncovered. The ophthalmoscopic appearances were as follows:—Margins of disc not sharply defined; retinal arteries rather below average size; veins not distended; very slight effusion of lymph along lines of the vessels, and radiating slightly in striæ from the disc; yellow spot visible and normal in appearance; rest of retina pale and bluish. No hæmorrhages. The left eye presented similar changes, but to a slighter degree. Vision of left eye remained fairly good up till now. 8th September.—Dimness of vision is recorded in the left eye. 19th September.—The left eye began to improve, and slight perception of light returned to the right eye for a short time. Coincident with loss of vision (which eventually became complete in both eyes) the patient developed a remarkably emotional condition. She complained of loss of power in the right side, but she could move the right arm and right leg freely, although with less force than the left—says she has difficulty in speaking, and sometimes answers “yes” to every kind of question. She was taken home by her friends, and shortly afterwards she had a definite attack of right hemiplegia, and could say only “yes” or “no,” and that at random. She acquired an idiotic expression, and seemed to be losing her mind. With occasional attacks of excitement she gradually sank and died about a fortnight later. Discuss the pathology of this case, giving your views as to its nature, and with reference to the following points of special interest in it—namely:—(a) As to its origin; (b) as to probable cause of loss of vision, the nature and the site of the lesion producing the blindness; (c) as to the nature of the hemiplegia; and lastly, as to the association of cerebral disease with the empyema. 2. Name the chief diseases of tropical climates, and state the isothermal limits of the tropical zone, as distinguished from the geographical. 3. Define enteric fever; describe its symptoms, its course and its treatment during its different stages, and in relation to its morbid anatomy. With what diseases may it be confounded, and indicate the differentiating diagnosis in each? 4. Describe the essential symptoms and typical forms of influenza; mention the pathological states which, more or less, intimately ally themselves with it, and name the diseases which have been erroneously described as cases of influenza. Explain the meaning of the term “Epidemic Constitution,” and describe how a case of influenza should be treated. 5. What are the chief officinal preparations for internal use, and their doses, of mercury and lead? In what tissues and organs have these metals been found after they had been taken as a

medicine or been introduced accidentally? By what channels do they leave the body, and how may their exit be accelerated?

Chemistry (Dr. Allman).—1. In the decomposition of water by an electric current, mention the pole of the battery (platinum or zinc) at which each of the liberated elements makes its appearance. 2. What is the arsenic of commerce? In what relation does it stand to the element of that name? Write down its formula. 3. What is the chief difference, as regards their constituents, between the ashes of marine and land plants?

Natural Science (Dr. Allman).—*Zoology*.—1. Give generally the geographical distribution of the *Trochilidae* (humming birds). 2. By what special features are many of the insects inhabiting remote oceanic islands characterised? 3. Refer to its proper sub-kingdom and class each of the following genera of animals:—*Mytilus*, *Argonauta*, *Holothuria*, *Actinia*. *Botany*.—4. How do plants differ from animals as to the source whence they derive the proteids of their tissues? 5. Refer to its natural order a plant with the following characters, and give one or more examples:—Flowers gamopetalous, crowded on a receptacle and surrounded by an involucre. Stamens five with the anthers united into a tube. Ovary coherent with the calyx, one-celled. Fruit with a simple erect seed. 6. Contrast the inflorescence of the fig with that of the mulberry. *Physica*.—7. How would you express the apparent loss of weight suffered by a body weighed in water? 8. How are icebergs formed? 9. What is the relation of the length of a pendulum to the time of an oscillation?

SALICYLIC ACID.

DR. CHOPIN (*Journal de Médecine et de Chirurgie pratiques*) has found from his investigations that salicylic acid, when the kidneys are healthy, increases the quantity of urine, but in acute nephritis diminishes it. In all abnormal conditions of the kidneys he has found that the acid is retained in the system, and that toxic effects are liable to be produced by even small doses.

CHLORALAMIDE.

In addition to its value as an hypnotic, chloralamide is declared, on the authority of Dr. Alt (*Wiener medicinische Blätter*), to be a specific for chorea. Fifteen grain doses given thrice a day completely cured a boy eleven years of age of a severe attack of chorea.

CORRIGENDUM.

In Dr. Alexander Harkin's paper on "The Vagus Treatment of Cholera," in the Number of this Journal for March, 1890 (Vol. LXXXIX., No. 219, Third Series), page 227, line 2 from the top of the page, omit the preposition "to" before the words "be scientifically treated."

ERYTHROXYLON COCA ;

ITS VALUE AS A MEDICAMENT.

By MARC LAFFONT, M.D., PARIS,

PROFESSOR OF PHYSIOLOGY AT THE FACULTY OF LILLE, FRANCE.

DURING the last few years the therapeutic use of coca has been so greatly extended that it may be interesting and useful as a *résumé* to enumerate its many applications.

It is well remembered how, in former years, the virtues of the salts of quinine were held to entirely supersede those of cinchona ; in like manner this inevitable error has arisen with coca, its alkaloid cocaine only having been considered by many. As to the comparison which many of our *confrères* make between the preparations of cocaine and of coca, we do not fear to state that, however sound may be the theory of preferring to administer certain alkaloids to administering a preparation of a plant of which the virtues vary according to where and how it was gathered, the place of its cultivation, its quality, and the constitution and nature of the preparation—we repeat, we do not fear to state that in the majority of cases, as the alkaloid does not contain all the active principles of the plant, it cannot be preferred, except in special cases where the particular action of the alkaloid alone is desired. The fact is well established that the salts of quinine cannot replace the extract, the wine, or the powder of cinchona, the tonic principles and the essential oils of which have, without doubt, shown a special therapeutic value ; and I need merely cite the indisputable success obtained by Professor Trousseau with the powder of cinchona in checking malarial fevers which had resisted even the largest doses of sulphate of quinine. More especially cocaine cannot replace all the active principles and the essential oils of the leaf of *Erythroxylon coca*, as has been proved from the time of the earliest discovery and use of this plant.

In 1887 at the Institute of France (Académie des Sciences), and in 1888 at the Académie de Médecine, I demonstrated that coca, by virtue of its active principles, had three very distinct separate actions :—*

1. As an anæsthetic, acting upon the protoplasm of the terminations of the sensory nerves, preventing the transmission of painful sensations to the centres of the unconscious sensibility of Bichat.

2. As a nerve tonic, producing functional excitement of the cerebral and spinal nerve centres, and increasing the intellectual and muscular activity.

3. As a tonic to the unstriped muscular fibres of the stomach, the intestines, and the bladder, producing functional excitement of the constrictor action of the great sympathetic nerve, with consequent functional exaltation of all the smooth muscular fibres or muscles of organic life.

The dissatisfaction produced and the complaints which are made that the plant is wanting in uniformity of quality, and is unreliable in producing the desired effects, are due to the varying quality of the preparation. An essential requisite to produce reliable uniform preparations of coca is a thorough knowledge of the origin of the leaf, its nature, and its quality. Careful study and researches made by Mariani for many years as to the origin, the nature, the species, the culture of the different leaves of coca, and the care which he gives to his preparations, have been the means of placing at our disposal products uniform in quality and unvarying in their effects in those varied cases where their internal administration is called

* Published in the "Proceedings" of the Academy.

Erythrozylon Coca.

for. I will cite but a few names among those of my many *confrères* whose recorded experience with the Mariani coca preparations coincides with my own, which I am about to set forth, based upon continued observation in hospital and private practice.

The first and main application of the "Vin Mariani," is as a general tonic for persons either physically or mentally overworked (Brown-Séquard, Germain Sée, Dujardin-Beaumetz, Ball, Bouchut, A. McLane, Hamilton, A. E. Macdonald, A. L. Ranney, L. C. Gray, L. Weber, Carlos F. MacDonald, J. Leonard Corning, H. M. Lyman, I. N. Danforth, P. S. Conner, J. K. Bauduy, C. H. Hughes); in convalescence after lingering wasting diseases, where nourishment is needed, and where it would be dangerous to overcharge the stomach; with all whose recovery is tardy from wasting or constitutional weakness; in chlorosis, anæmia, and rachitis (C. H. Robin, Durand Fardel, Gubler, De Piétra-Santra, Fordyce Barker, Isaac E. Taylor, A. L. Loomis, W. T. Lusk, F. P. Foster, C. C. Lee, J. J. Henna, L. L. McArthur).

It is further used in diseases more specially referable to atony of the smooth muscular fibres, among which we class atony of the stomach. In dyspepsia, in those very common cases where this organ has become weak and torpid, is distended, and fails to secrete gastric juice, coca is well indicated (De Saint-Germain, Cottin, Dieulafoy, Salemi, Compagno, Rabuteau, A. J. C. Skene, P. A. Morrow, T. C. Giroux, Hunter McGuire, E. R. Palmer, O. O. Burgess, J. R. Leaming, Daniel Lewis, T. E. Satterthwaite, W. H. Pancoast, D. F. Woods, J. N. Hyde, L. G. N. Denslow).

It is also serviceable in weakness of the vocal chords, in the case of ministers, singers, actors, teachers, and orators (Ch. Fauvel, Morell Mackenzie, Lennox Browne, Botkine, Cozzolino, Zawerthal, Poyet, Coupard, Fränkel, Marius Odin, Labus, Massei, Louis Elsberg, R. P. Lincoln, Beverley Robinson, W. C. Jarvis, H. H. Curtis, C. C. Rice, C. E. Sajous, E. Fletcher Ingals, H. Schweig, T. R. French).

It is, moreover, of value in weakness of the vascular organs, with the anæmic, the plethoric, where, principally on the face, the small blood-vessels show enlargement or venous arborescence which points to a similar state in the vessels of the nervous centres. The same vascular weakness is also observed with the varicose, in whom coca is indicated; likewise with the paraplegic, with whom it regulates the circulation of the nervous centres (Bernard Bétancès, Landowski, Casenave-Dalaroche, Gazeau, Rabuteau, V. P. Gibney, Robert Newman, E. B. Bronson, J. E. Janvrin, B. McE. Emmet, W. O. Moore, W. J. Morton, D. W. Yandell, J. H. Etheridge).

It may be also as a regulator of the nervous centres that the wine of coca, known as Vin Mariani, produces such marvellous results in mountain-sickness, in sea-sickness, and in the vomiting of pregnancy. It is well remembered how this preparation sustained the illustrious General Grant during several months (Cuffer Letellier, Dérécagaix, Trossat, Bouloumie, Dechambre, Fordyce Barker, G. F. Shrady, J. H. Douglas, H. T. Hanks, G. R. Fowler, J. M. Keating).

From a psychological point of view, and from mental pathology, it may be stated that coca is the only drug which successfully combats melancholia, low spirits, and all forms of depression of the nervous system, upon which it acts "like fulminate," to use the felicitous expression of Professor Gubler.

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THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

MAY 1, 1890.

PART I. ORIGINAL COMMUNICATIONS.

ART. XIV.—*The State Medicine Qualification.** By THOMAS WRIGLEY GRIMSHAW, M.A., M.D.; Diplomate in State Medicine (Dubl.); F.K.Q.C.P.I.; Registrar-General for Ireland.

THE question of the conditions under which qualifications in State Medicine should be conferred has recently come prominently before the profession, owing to the action taken by the General Medical Council at their meetings of May and November of last year (1889).

The circumstances under which the General Medical Council have taken action in the matter of qualifications in State Medicine are somewhat peculiar.

Under section 21 of the Medical Act of 1886 power was conferred to register a diploma for proficiency in Sanitary Science, Public Health, or State Medicine, provided it appeared to the Privy Council or to the General Medical Council to deserve recognition.^b

* Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 25, 1890.

^b Medical Act of 1886—49 & 50 Vic., cap. 48.—Sec. 21. Every registered medical practitioner to whom a diploma for proficiency in Sanitary Science, Public Health, or State Medicine has, after special examination, been granted by any college or faculty of physicians or surgeons, or university in the United Kingdom, or by any such bodies acting in combination, shall, if such diploma appears to the Privy Council or to the General Medical Council to deserve recognition in the *Medical Register*, be entitled, on payment of such fee as the General Council may appoint, to have such diploma entered in the said Register, in addition to any other diploma or diplomas in respect of which he is registered.

The General Medical Council possessed these powers for two years before they took any action to exercise them, and it was apparently not until the Local Government Act of 1888 came into force that the Council thought it necessary to do anything in the matter. The eighteenth section of that Act, although a step in the right direction, appears to me to be extremely weak; it is as follows:—

18. (1) Except where the Local Government Board, for reasons brought to their notice, may see fit in particular cases specially to allow, no person shall hereafter be appointed the medical officer of health of any county or county district, or combination of county districts, or the deputy of any such officer, unless he be legally qualified for the practice of medicine, surgery, and midwifery.

(2) No person shall, after the first day of January one thousand eight hundred and ninety-two, be appointed the medical officer of health of any county, or of any such district or combination of districts, as contained, according to the last published census for the time being, a population of fifty thousand or more inhabitants, unless he is qualified as above mentioned, and also either is registered in the *Medical Register* as the holder of a diploma in sanitary science, public health, or State medicine, under section 21 of the Medical Act of 1886, or has been during three consecutive years preceding the year 1892 a medical officer of a district or combination of districts, with a population, according to the last published census, of not less than twenty thousand, or has, before the passing of this Act, been for not less than three years a medical officer or inspector of the Local Government Board. (Sec. 18 Local Government Act, 1888.)

It will be observed that unless the county contains 50,000 persons according to the last published census, it is deemed unnecessary to require that the medical officer of health should have any special qualification for the discharge of his duties; so that people who have the misfortune to be members of a community numbering less than 50,000 may have their arrangements for the prevention of disease under the medical charge of a person who has never given any special attention to this branch of his profession.

The only cause I can see for the Medical Council not taking early steps to carry out this part of the duty is the careless and weak way in which Parliament discharged theirs, and the date of 1892 as the commencement of the compulsory provision.

Whatever weakness Parliament may have shown in the enactment of sec. 18, it was quite clear by the introduction of the

provision regarding a minimum population of 50,000, and from the preceding sections of the Act, that it is intended that a scientific expert in sanitary science should be appointed to the important administrative post of medical officer of health for a large district, that he should devote his whole time to his duties, and should be well paid for his services. That this was the intention of Parliament is pretty well shown by section 17, which immediately precedes, and is evidently intended to act as a prelude to sec. 18, already quoted. Sec. 17 of the Local Government Act, 1888 (51 & 52 Vic., cap. 51), reads as follows:—

(1) The Council of any county may, if they see fit, appoint and pay a medical officer of health, or medical officers of health, who shall not hold any other appointment or engage in private practice without express written consent of the Council.

(2) The County Council and any district Council may from time to time make and carry into effect arrangements for rendering the services of such officer or officers regularly available in the district of the district Council, on such terms as to the contribution by the district to the salary of the medical officer, or otherwise, as may be agreed, and the medical officer shall have within such district all the powers and duties of a medical officer appointed by a district Council.

(3) So long as such an arrangement is in force, the obligation of the district Council under the Public Health Act, 1875, to appoint a medical officer of health shall be deemed to be satisfied without the appointment of a separate medical officer.

Now what have the Medical Council done towards providing such a high-class officer? Here are their own provisions as set out in the resolutions passed by the General Medical Council, on June 1 and November 30, 1889, in regard to diplomas in State Medicine:—

“(a) This Council, having regard to the terms of section 18 of the Local Government Act, 1888, and observing that under that section special privilege is to be accorded to the holders of the diplomas granted under section 21 of the Medical Act (1886), and therein described as diplomas in sanitary science, public health, or State medicine, thinks it essential to declare, with regard to its own future action under section 21 of the Medical Act (1886), that it will not consider diplomas to ‘deserve recognition in the *Medical Register*’ unless they have been granted under such conditions of education and examination as to ensure (in the judgment of the Council) the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health; and that the Council, in forming its judgment

on the conditions of education and examination, will expect the following rules to have been observed :—

“(b) A period of not less than twelve months shall elapse between the attainment of a first registrable qualification in medicine, surgery, and midwifery, and the examination for a diploma in Sanitary Science, Public Health, or State Medicine.”

“(c) Every candidate shall have produced evidence of having attended, after obtaining a registrable qualification, during a period of six months, practical instruction in a laboratory approved of by the Body granting the qualification.”

“(d) Every candidate shall have produced evidence of having for six months practically studied the duties of out-door sanitary work under the medical officer of health of a county or large urban district.”

The Council not having at present any means of knowing how far medical officers of health may be able or willing to undertake the education of pupils, this Resolution will not at present be insisted on.

“(e) The examination shall have been conducted by examiners specially qualified, and shall comprise laboratory work as well as written and oral examination.”

“(f) The Rules as to study shall not apply to—

“(a) Medical practitioners registered, or entitled to be registered, on or before January 1, 1890 ;

“(β) Registered medical practitioners who have for a period of three years held the position of medical officer of health to any county, or to any urban district of more than 20,000 inhabitants, or to any entire rural sanitary district.”

“The Executive Committee has power, in special cases, to admit exceptions to the rules for the registration of diplomas in sanitary science, and report the same to the General Council.”

It appears to me that the Medical Council have dealt with this subject in a very hurried and ill-considered manner, and seem to have totally disregarded the opinions of the Irish Medical authorities in this matter, as set out in the following Report :—

“REPORT.

“After full consideration, we, the undersigned representatives of the four Medical Authorities in Ireland granting qualifications in State Medicine, deputed to take part in a conference on State Medicine, called together at the invitation of the King and Queen’s College of Physicians in Ireland, beg to report as follows :—

“As regards Resolution (a) of the General Medical Council, the Conference foresees that in the not distant future there will be a demand for two classes of qualifications in State Medicine. Of these, one will be required by those acting as medical officers of health in small districts—

for example, Irish Poor Law medical officers in charge of districts with a population averaging 6,000 or 7,000. The other qualification must ensure 'the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health,' and will be sought by those who may be regarded as experts, devoting their whole time to the public health service, and having charge of large districts—for example, the medical officers of health acting under County Councils in England, or superintendent medical officers of health in large urban sanitary districts in Ireland.

"In view of the foregoing, the Conference are of opinion that it will be necessary to have two grades of qualification in State Medicine. One of these, the lower qualification, should be based on a specified syllabus of subjects, and might be undergone at any time after the candidate has passed his qualifying examination in medicine, surgery, and midwifery. To such an examination the Conference think that Rules (b), (c), and (d) of the General Medical Council should not apply.

"In the case of the other, or higher qualification in State Medicine, the Conference approve the said Rules, and are further of opinion that even a fuller curriculum than that laid down in those Rules should be required, so as to provide special instruction in such technical subjects as Law, Engineering, Vital Statistics, Geology and Meteorology, as applied to State Medicine.

"The Conference desire to point out that the recommendations which they have made are in accordance with the views put forward by the State Medicine Committee of the General Medical Council in their Report dated July 2, 1869.

"Should it be deemed desirable to distinguish the higher from the lower qualification by a separate title, the Conference suggest that the term 'Certificate in Public Health' would be a suitable appellation for the lower qualification, while that of 'Diploma in State Medicine' might be reserved for the higher qualification.

"As a matter of detail, the Conference wish to point out that Rule (d), as adopted by the General Medical Council, would be practically unworkable in the case of Ireland at present, where no 'county districts' and only a few 'large urban districts' exist.

"The Conference recommend that a similar reply to the letter of the General Medical Council should be sent by each of the Universities and by each of the Royal Colleges taking part in this Conference.

"SAMUEL HAUGHTON, *University of Dublin*.

CHRISTOPHER J. NIXON, }
DAVID B. DUNNE, } *Royal University of Ireland.*

JOHN WILLIAM MOORE, *K. & Q.C.P.*

JOHN KELLOCK BARTON, *R.C.S.I.*

"August 12, 1889."

I consider this Report very clearly and concisely expresses the defects in the procedure followed by the General Medical Council. The Council appear to have misconceived the extent and nature of the duties required of a medical officer of health of a large district devoting his whole time to the work. Such an officer is, in my opinion, and in the opinion of most persons who have studied the question, essentially an executive and consulting officer, not one for the personal or individual carrying out of preventive measures and sanitary improvements. Two elements in the special curriculum required by the Medical Council point to their holding a contrary view to that which I have propounded; they require certificates of six months' practical instruction in a laboratory and six months out-door sanitary work. There is not a word about what sort of laboratory the study is to be carried out in further than it is to be "approved of by the body granting the qualification." Is it to be in a chemical, physical, or bacteriological laboratory, or partly in each? If partly in each, the time for study is insignificant. If not in all, the education will be very incomplete. Many persons believe that the Medical Council thought of nothing but a chemical laboratory, and that the education was to be directed towards making the holder of a State Medicine qualification a public analyst. Now this is precisely one of the things I think the medical officer of health should not be. A good public analyst should be a first-class chemist, and such are seldom to be found anywhere except among those who devote their life to chemistry and make scientific chemistry their profession. The medical officer of health has too many and too various executive duties to perform to give the requisite time to the personal conduct of a chemical laboratory. This may not have been the idea of the Council, but they have not indicated any other. As to the second requirement—that of a certificate of "out-door sanitary work"—I am at a loss to interpret the phrase, but it must refer to either inspection of nuisances or the study of engineering works. I defy any one to find out which. A medical officer of health certainly should know how to inspect nuisances, but he should not be an inspector of nuisances; he should also understand how sanitary engineering works are carried out, but it is not his duty to carry them out. What, then, do the Medical Council mean by "out-door sanitary work?" Just like the laboratory work, it is left charmingly indefinite, and the result is that many have interpreted it to mean "inspector of nuisances;" others, taking a higher view of the

subject, have interpreted it to mean out-door engineering works—sewage, water, gas, structure of buildings, &c. This certainly is not the interpretation I would put on the phrase—the certificate is to be given by a medical officer of health of a county or large urban district. Far wrong as I think the Medical Council to be in their views about State Medicine qualifications, I can scarcely give them credit for being so foolish as to require a member of the medical profession to certify to engineering knowledge! It may be so, but I can scarcely believe it.

Not only do the Council demand this meagre and indefinite curriculum, but they do not make any specific demand for any instruction in such important subjects as meteorology, engineering, vital statistics, or law and medical jurisprudence. Why are all these left out? I cannot even conceive an answer to this question. As has been properly implied by the Report of the Committee representing the Irish medical authorities, the Council do not seem to have taken much note of the report of the State Medicine Committee of the Council of July 2nd, 1869. I fancy some have even forgotten the names of the illustrious men who formed that Committee—they were Acland, Christison, Paget, Parkes, Rumsey, A. Smith, Stokes, Thomson. Not one of these men remained to advise the Council, but they had left their opinions behind them, not only in their reports to the Council but also in the personal works of Rumsey—who has been justly styled the father of State Medicine—Acland, and Stokes; and they also furnished the Council with the opinions of nearly all the men in the world whose opinions were worth having at that time. Now, I may say generally that all these authorities concurred in recommending that all the subjects I have just mentioned should be comprised in the curriculum and examinations of candidates for State Medicine diplomas. Have any of these decreased in importance since the year 1869? I should rather think not; they have grown vastly in their proportion, and a great deal more should be expected in 1889 than was thought necessary in 1869. Yet the Medical Council does not think so. A minimum qualification is to be provided to meet the requirements of section 18 of the Local Government Act for a medical officer of health fully qualified in State Medicine and fit to exercise the important functions of a medical officer of health of a district containing a population of 50,000 inhabitants or upwards. All of us interested in the efficiency of public health organisation pressed for the provision now found in section 18. I

think Parliament would have taken little notice of our efforts if they had known how little the General Medical Council required to be added to ordinary professional knowledge in order to provide a fully-fledged diplomat in State Medicine.

We in Dublin have a right to feel strongly on this subject. As Rumsey was the father of State Medicine in England, so Stokes was the father and founder of State Medicine diplomas in the United Kingdom. Dublin was the first University, and the King and Queen's College of Physicians the first medical corporation to provide such a qualification. In a little work entitled "National Health," by Dr. (now Sir Henry) Acland, will be found "the substance of a lecture" delivered by him at the Royal College of Physicians of England, "at the request of the President and Council." In appendices to this lecture will be found an important extract from the proceedings of the Royal Sanitary Commission of 1871, and an important "Memorandum in reference to the Establishment of a Qualification in State Medicine in the University of Dublin," by Dr. Stokes, dated January, 1870.

These documents may be considered as the foundations upon which the *Profession* of State Medicine in the United Kingdom has been gradually developing for upwards of 20 years, and I much fear these foundations have been sapped by the action of the General Medical Council. Nearly all authorities seem to concur in the view that there should be two grades of qualifications in State Medicine—one for those district poor law medical officers who necessarily must combine many of the duties of health officers with those of attendance on the sick poor; such a qualification should also be required of officers of the Navy and Army, and resident officers of all public institutions, such as lunatic asylums, prisons, hospitals, &c. The Royal Sanitary Commissioners, in that portion of the Report quoted by Dr. Acland in his appendix, say:—"This being so, the basis of the public health staff in this country may with great advantage (in consequence of the universal presence of the sick poor) be the body of men now known under the name of *poor-law medical officers*, a staff of public officers paid out of public funds. Of these there are already in England alone about 4,000. After attentively considering this central point, and having regard to the three principles already enumerated—viz., universality, efficiency, and economy—we find ourselves driven to the conclusion that they form the most eligible basis of sanitary executive in Great Britain.

"We admit, *in limine*, that an objection may be taken by some who associate the idea of inferiority with the name of parish doctor. But such notions should be set aside as now no longer applicable, either to the medical profession or the administration of the poor-law. This gigantic instrument of social charity, if chargeable with some evils, is at least unique in the good which it attempts.

"We have in other parts of our Report enumerated the various arguments for and against the expediency of taking counties, unions, parishes, and river-basins as the sanitary limits or areas, and we have freely discussed the question of the fitness or unfitness of the county boards, unions, and parish officers and their commissioners for the regulation of this part of the local arrangements of the kingdom. Of the propriety of the selection of the poor-law medical officers as the permanent agents in the disease-prevention organisation we have no doubt. The following reasons for this conclusion will also help to illustrate their duties, and their place in the general health administration:—

"1st. These officers exist already and everywhere.

"2nd. They are intimately acquainted with the habits of the poorer classes, the classes which most need assistance. They are themselves fairly educated and belong to that part of the middle class which combine sterling practical habits with considerable culture, and live a life which itself is a perpetual education."

The Commissioners go on to point out the various good qualities for the service possessed by the members of the Poor-law Medical Service, and proceed to define the duties which the Commissioners think they should perform, and then proceed to deal with the experts or superior officers, who should be highly and specially qualified in State Medicine, and devote their whole time to their duties.

I believe it will be found absolutely necessary to have these two classes of offices and two classes of diplomates to fill them. The Committee of the General Medical Council thought so too in the year 1869, and so did the Council of that day. So evidently did Dr. Stokes when he drew up his memorandum for the *higher*, not, be it remarked, the lower qualification. I am sorry to say I think the authorities of the University of Dublin seem inclined to take the lower as their ideal instead of the higher. They have reduced the standard required by candidates and have accepted the regulations of the General Medical Council.

If the General Medical Council desire to create experts devoting their whole time to the work of medical officers of health over large areas, or to act as district inspectors, their programme is miserably insufficient. If it is for a district officer their standard is too high, as I have already pointed out. The Council have, as is too common in these days, accepted a compromise in order to get out of a difficulty, and thus required conditions which, in my opinion, are suitable neither for a higher nor for a lower qualification in State Medicine, and which I trust will not be received, except after careful inquiry, as a qualification by any body wishing to appoint a fully-qualified expert as medical officer of health over a large and populous district.

I am afraid it is now too late to alter the ill-judged action of the General Medical Council, but I think the universities and colleges will find at no distant date that a higher qualification than that represented by the minimum of the General Medical Council will be necessary in order to avoid a complete loss of confidence of the public health authorities in State Medicine diplomas as qualifications for the higher duties of medical officers of health.

It will naturally be expected that I should suggest some system of examination or curriculum of study, and definition between the two diplomas which I have suggested as a higher and lower qualification in State Medicine.

I shall take the lower qualification first; for this, I am of opinion, there should not be any curriculum of study required. I would allow the candidate to present himself for examination at any time after he had completed his regular medical curriculum, and would confer his diplomas at the same time, or immediately after he has received those in medicine, surgery, and midwifery required for registration under the Medical Acts. I would require the candidate for this diploma to answer at a special examination comprising hygiene, chemistry as applied to sanitary questions, elementary sanitary engineering—to be defined by syllabus; to show a slight knowledge of the law as regards nuisances, the spread of infective disease, &c.—all defined by syllabus. This qualification might be termed a certificate in sanitary science, and should be a registrable qualification.

For the higher qualification, I would require the candidate to be a registered medical practitioner of two or three years' standing—I prefer three years. He should produce evidence of having

studied Law, Engineering and Architecture, Vital Statistics, Geology and Meteorology, as applied to State Medicine.

The examination should extend over several days, and I think the classification of subjects of examination adopted by the University of Dublin may be taken as a good one. This qualification might be designated a Diploma in State Medicine.

As already pointed out, I think all poor-law medical officers and resident medical officers of public institutions should be required to possess the minor qualification, and I do not consider any one should be permitted to act as an inspector in a medical capacity, such as Local Government Board, Factory, Lunacy, or Prison Medical Inspector, without possessing the higher qualification; neither should any one be permitted to act as a superintendent medical officer of health or medical officer of health of a large and populous district—and I think every district should be large and populous—without the possession of the higher qualification.

ART. XV.—*A Fever resembling Dengue, observed at Kells, Co. Meath.** By JOHN RINGWOOD, L.K.Q.C.P., L.R.C.S.I.; Medical Officer, Kells Union and Fever Hospital.

DURING the summer of 1885 I met with several unusual cases of fever, which, after careful observation, I diagnosticated as dengue or break-bone fever. These scattered cases were evidently a milder modified form or sequela of a virulent bilious relapsing fever which had been epidemic in Kells for the previous six months.

Some of my cases during this outbreak of bilious fever were so severe that they were in no respect different from genuine yellow fever—resembling the cases of yellow fever so fully described by Dr. Stokes and Dr. Graves as having occurred in Dublin during an outbreak of bilious fever in 1826.

At the meeting of the British Medical Association held in Dublin in 1887, I read a paper on the cases of bilious relapsing and yellow fever which came under my notice during that period. I was to have read a paper at the next meeting of the British Medical Association held in 1888 on the further history of this outbreak, but was prevented from doing so by a serious illness; in that paper I would have given the history of the succeeding outbreak of dengue, which was the first ever observed in the British

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, February 28, 1890. [For the discussion on this paper see p. 364.]

Isles. And now I shall endeavour to lay before you (the Fellows of the Royal Academy of Medicine in Ireland) the consecutive history of this dengue fever, which has been under my constant observation for the last four and a half years, during which time I have treated over five hundred well-marked cases; and having seen in the last four months numerous cases of so-called influenza I must confess that up to this I have seen no new symptoms which would lead me to suppose that the disease is a different one from that which I have carefully studied and reported on during the past five years. Of course, as I shall now show, the disease has not been identical in every case, it has varied with each season, as every epidemic does, but still underlying all its varieties the dengue character has been strongly marked.

Cholera and yellow fever, whose permanent habitations are in the torrid zones, sometimes visit these shores, and why should we consider ourselves exempt from the visitation of their milder predecessor, or successor, dengue fever.

The disease was introduced into the neighbourhood of Kells early in 1885, on the return of our troops from Egypt, from which time till midsummer I treated 220 cases, including 6 of yellow fever. Its type on its first introduction was that of bilious relapsing fever until the summer of 1885, when the relapsing fever became gradually milder, the type of the disease lost its malignancy, and the bilious vomiting and jaundice became secondary symptoms. Several cases came then under my notice of patients who, after having been exposed to the contagion of the relapsing fever, developed the following symptoms after an incubation period of about four days:—Sudden onset, giddiness, syncope, intense frontal or occipital headache with great prostration, pain in eyes, neck, back, bones, muscles and joints; hands and feet stiff and painful, skin hot and dry, tongue yellow and coated; severe rigors, gastralgia, tympanites, rigidity of abdominal muscles, colicky pains, constipation, motions fetid, epistaxis or other hæmorrhages; face flushed, swollen and puffy, with a bright scarlet triangular patch on each cheek, the apex of each triangle meeting across the bridge of the nose; joints slightly swollen, temperature high, pulse 100; after three days' sharp sweating crisis, disappearance of febrile symptoms, apparent convalescence, pulse soft and slow and temperature subnormal; relapse on fifth day with an eruption, accompanied by enlarged glands, followed by free desquamation and tedious convalescence.

I now beg to lay before you the following case :—

CASE.—A. B., aged twenty-four, healthy male, was on the 11th of July, 1885, suddenly attacked with such giddiness and vertigo that he staggered as if intoxicated; this was soon followed by stiffness in hands and feet, intense frontal headache, with pain at back of eyeballs, photophobia, slight nausea, skin hot and dry, tongue covered with yellow slime, papillæ enlarged. 12th—Bad night; could not rest with intense pain in back, which felt as if it was being sawn across; complained of feeling sick and giddy; pulse, which had been full and strong the evening before, now soft and weak; hands stiff, swollen and painful; bowels confined, abdominal muscles rigid, epigastrium tender. 13th—Better night, but utterly unable to move from intense occipital pain and crick in neck; eyes sore and smarting, cheeks puffy, and red patch extending across bridge of nose. 14th—Crisis, with profuse perspiration, rapid fall of temperature to subnormal, feverish symptoms gone, tongue clean, pains gone. 15th—Feels well after a good night, with difficulty kept in bed; pulse slow, temperature subnormal, feels only giddy on sitting up, appetite returning. 16th—Had rigor at 1 o'clock a.m., with rapid rise of temperature; return of feverish symptoms, eyes smarting, conjunctiva yellow, bowels confined, complains of nausea and pain over bladder, eruption rapidly extending from forehead over face and neck, glands in neck tender and swollen, tongue tremulous, muscles of hands in constant state of tremulous spasms, intense neuralgic pain shooting through spine, brachial and sciatic nerves; throat slightly sore, and difficulty in swallowing from spasm of the muscles of deglutition. 17th—Whole body covered with eruption resembling that of scarlatina; could not rest with constant itching and tingling of whole surface of body; greatly annoyed by flatulence and upward movement of the diaphragm; feeling of faintness and utter prostration, with intense thirst. On 18th had favourable change, fever subsiding, desquamation commencing. On 20th, slow convalescence, no further relapse or complications. The temperature chart of the above case gives a good idea of the disease in its simplest form.

In this case the eruption resembled that of scarlatina, but in other cases it resembled that of measles, urticaria, prickly heat, or chicken-pox, and in cases with several relapses the eruptions in each relapse assumed a different character; where there was intense pain and swelling of joints without any eruption the disease resembled rheumatic fever with relapses; when the joint pains were similar and the eruption like scarlatina the disease closely resembled rheumatic scarlatina, under which name dengue has been described; when eruption was limited to mouth and throat the disease closely resembled rheumatic tonsillitis; when eruption extended to throat

and Eustachian tubes and frontal sinuses it gave rise to sore throat, abscess in internal ear, ear vertigo and intense frontal headache; when further spread it usually, at least in primary fever, either extended to the larynx and down trachea and bronchial tubes, giving rise to laryngeal irritation, spasm, incessant cough and aphonia, tracheitis and capillary bronchitis, with shifting patches of pulmonary congestion. If, on the other hand, it followed the alimentary track, it caused œsophagitis, with painful spasmodic difficulty in swallowing, acute gastralgia, with intense burning pain in stomach, duodenitis, with bilious vomiting and slight jaundice, enteritis, with constipation, flatulence, and intense burning pain in rectum, with tenesmus and occasional hæmorrhage. When the mucous membrane of the genito-urinary track was affected, which sometimes occurred apparently from metastasis of the skin eruption, kidneys were congested and tender, with pain in loins, cystitis and urethritis in both sexes; inflammation of Cowper's glands and orchitis in males; vaginitis, menorrhagia, pyosalpinx, and ovarian inflammation in females, showing the close analogy of these organs in the different sexes. When the full force of the disease fell on the nervous system, intense frontal headache, agonizing backache, neuralgic pains in muscles, tenderness of superficial nerves, cramps in calves of legs, tingling, burning and stiffness of hands and feet, and sometimes of the whole body, resulted; this stiffness often followed by transient quivering of muscles of extremities, drop-wrist and weakness of extensor tendons of feet. The giddiness, ear vertigo, mental confusion, at onset were purely nervous affections, as were also the rigidity of the abdominal muscles, the peculiar twisting movements and painless muscular spasms of the intestines. The jaundice was certainly often caused by nervous spasm of bile duct. The irregular pulse, varying not so much in rhythm as in fulness and force, with the cardiac oppression, angina, and breath-hunger, were certainly the results of the effects of the poison on the sympathetic nervous system. The herpes on lips, ears and nose, the herpes zoster over course of painful nerves, the brachial and intercostal, were similar results of the nervous implications, as were also the constant tendency to syncope, utter prostration, deathlike coldness of knees and surface of body, total absence of delirium and sub-normal temperature.

Dengue, as observed by me in 1885, was, in uncomplicated cases, a short fever of about eight days' duration, divided into three nearly equal stages—first, with intense general pains, high fever,

pathognomonic patch on cheeks and nose and peculiar form of conjunctivitis; second stage ushered in by sweating crisis, with absence of fever, and generally subnormal temperature; third stage, relapse, with skin eruption, enlarged glands, high fever and desquamation.

In 40 per cent. of my cases eruption appeared on skin during third stage, and slight jaundice in 16 per cent.

The principal complications which I observed at this time were—relapses, septicæmia, phlebitis, giving rise to phlegmasia dolens; and in one case of a feeble old man gangrene of the right foot. Abscess in ears frequently occurred, also in upper or lower eyelids of left eye in four cases. Strange to say, I never saw any of these abscesses in right eyelids. Embolisms in lung tissue gave rise to abscess in ten cases, four of which terminated in phthisis. Large anthraxæ often greatly delayed convalescence; and in numerous cases herpes on lips extended into the mouth, giving rise to aphthous ulcers on inside of cheeks and tongue, and in two cases to cancrum oris and glossitis. These aphthous ulcers often appeared about the nose and anus.

About this time I observed that pregnant women did not abort when attacked by dengue—a result which always occurred in those attacked by the preceding bilious relapsing fever. During the winter of 1885 the number of cases greatly lessened, and the disease became freer from complications, but the pains in the muscles and bones so severe as to well merit the American name of break-bone fever. Where the sanitary arrangements were very defective an occasional case occurred of the original relapsing fever, showing the close connection between the two diseases.

In the spring of 1886 diphtheria became a frequent complication of third stage of the disease; and during the summer of that year, when there was a great lull in the activity of the disease, I met with several cases of a low protracted illness, with slight jaundice, pain under left lower ribs, with splenic enlargement and ulcers on legs, and general debility, with slight feverish exacerbations and remissions, perhaps caused by minute hepatic abscesses. These cases occurred amongst those who had escaped attacks of either fever.

In the winter of that year the pulmonary complications became more pronounced, and a contagious form of broncho-pneumonia with intermissions and relapses often occurred amongst those exposed to the dengue contagion; and in these cases I found that the cough, dyspnoea, &c., bore not the slightest proportion to the

amount of lung actually implicated. Pulse in these cases varied greatly—now full, strong and bounding, and then, in a few hours, weak, empty and irregular; respiration slow or rapid; expectoration sometimes nil or only mucous, free from air bubbles; inflamed portion of lung sometimes slowly degenerating into abscess, or becoming the starting-point for tubercular mischief.

During the summer of 1887 the bilious element again predominated, and diarrhoea for the first time took the place of constipation—rather an advantage, as few cases in which there occurred spontaneous diarrhoea had any relapse.

The disease seemed to smoulder until the end of 1887, when it burst out again in full activity—the first period of the disease having nervous symptoms most strongly marked, and the secondary eruption having all the characteristics of malignant measles, complicated with empyema, abscesses in lungs, septicæmia, multiple abscesses in joints, and tendency to relapse after relapse, with a different form of eruption in each relapse.

The following case I have already published:—

A little girl, aged fifteen, had first an attack of dengue, with measly eruption, followed by relapse, with eruption resembling scarlatina, which greatly affected throat, and was complicated by a sharp attack of diphtheria and albuminuria; while freely desquamating a third relapse occurred, with a pustular eruption, the pustules actually pushing off flakes of the desquamating skin.

The area over which this ebullition of the disease spread was greatly extended, and I had then under my care 110 cases of the disease, which disease gradually died out again, and I saw a case only now and then, just enough to keep the disease alive, though this was hardly necessary, as, by this time, every acute disease had taken on a dengue type and become intermittent—a very unusual phase of disease in this climate.

Towards the winter of 1888 a contagious form of pleuro-pneumonia of the right lung, with bilious complications, came under my care, in several cases ending in effusion, serous or purulent. At this time I had six cases of pericarditis, and five of peritonitis, showing that for the first time the poison of the disease had fallen on the serous membranes.

In the spring of 1889 I had several well-marked cases of dengue, with severe lung complications and relapses, one of which Dr. Magee Finny saw with me in consultation.

During the last four months a large percentage of the population here has been affected with the disease in various forms—few, indeed, escaping without at least a slight attack; and several who had gone through one or two attacks during the last five years being now similarly affected, proving that former recent attacks in no way confer protection on individuals or the community at large. The present outbreak has the characteristics of those of the three last winters combined.

I have seen in the last four months, in the Kells Fever Hospital or in private practice, an average of 50 patients a day severely enough affected to be confined to their beds, and amongst all these I have not met with a single case exhibiting symptoms or complications which have not come under my notice in the last five years, and been described by me in this paper. So that the conviction forces itself upon me that this neighbourhood has never been free for the last five years from either influenza complicated by dengue, or dengue with modified cases, which are commonly called influenza. That the latter conclusion is the correct one the history of outbreaks of dengue in tropical regions and America fully corroborates.

Dr. Christie, Lecturer on Public Health, Anderson's College, Glasgow, seeing a report of mine in one of the recent Medical Journals that dengue had appeared in these northern latitudes, kindly sent me his paper on an outbreak of dengue which had come under his observation in 1870 in Zanzibar. In this paper he gives all the symptoms of the disease as exactly described by me as occurring in the typical cases of dengue which came under my observation in 1885. He states that the triangular red patch occurring on each cheek, with apex across bridge of nose, is pathognomonic of dengue.

Limited space prevents me from alluding further to his most interesting paper.

With regard to this red patch on the face allow me to state that in the cases of yellow fever which I treated here in 1885, I reported that one of the most characteristic features of these cases was the purple patch (nearly black) on cheeks, extending across nose, together with the purple ears. In my cases of bilious relapsing fever the tint of these patches was dusky red with ears still purple; while in my cases of well-marked dengue these patches were brilliant scarlet, while the ears were congested and often covered with herpes. In each of the three diseases we had sudden onset, high fever, rigidity of abdominal muscles, colicky pains, tympanites, constipated

bowels, and jaundice, varying only in degree. Sudden death from syncope was always a present danger in all three diseases; utter prostration of mind and body and total absence of delirium, sweating crisis, feverish intermissions, with subnormal temperature and relapse, followed by tedious convalescence and the same complications, make the diseases one and the same, varying only in degree as to severity and the part of the system affected; in yellow fever the ganglionic nervous system—in relapsing fever the glandular system—and in dengue fever the nervous and cutaneous system—bearing the brunt of the fever.

In an account of an outbreak of dengue fever which occurred between November, 1888, and September, 1889, on board H. M. S. *Agamemnon*, stationed at Zanzibar, reported by Dr. Godding, and published by the *British Medical Journal* of the 15th of this month, there were 175 cases of bilious fever during the first six months before a typical case of dengue occurred—the same time as elapsed before my cases of bilious fever took on the pure dengue type.

Uncomplicated dengue in healthy subjects and with favourable surroundings is never a fatal disease, still, even in mild cases, it leaves behind it a vitiated state of system and great debility; whilst occurring amongst the old or delicate it is a most dangerous disease—with old men markedly so, old women generally recovering. During the last month I have treated four old women whose ages ranged from 89 to 94, who have successfully battled against severe typical attacks.

The disease is certainly contagious, the germs clinging for a long time to walls, bedding, &c., &c., and being unaffected by ordinary disinfectants. Horses, cats, and dogs readily take the disease from human beings, and when affected spread the disease amongst their own species as well as human beings. I have already reported such cases, but the limits of this paper prevent my doing more than alluding to the subject.

Dengue in tropical climates usually follows in the wake of either cholera or yellow fever epidemics. A severe outbreak of cholera occurred in 1821, followed by dengue in 1823. The cholera of 1870 was followed by dengue in 1871. The yellow fever outbreaks of 1825, 1843, 1850, 1880, were each followed by epidemics of dengue. The outbreak of bilious and yellow fevers in Dublin in 1826, described so graphically by Dr. Graves, was followed by cases with rheumatic pains, jaundice, and eruptions, which certainly bear a great resemblance to the dengue which was then very pre-

valent in America and Africa. The cholera in Dublin in 1832 was followed by influenza in 1833, when dengue was prevalent in Australia and Africa. Yellow fever in Scotland in 1845 was followed by influenza in 1844, at which date dengue was epidemic in America. The relapsing and yellow fevers in Dublin in 1846 was followed by influenza. Relapsing and yellow fevers in Kells in 1885 was followed by dengue, which has been endemic ever since. During same period dengue has been prevalent in Australia, Africa, America, and, as far as I can gather, is now everywhere epidemic.

I think the above dates clearly prove that, when dengue, the successor of cholera or yellow fever, is widespread over tropical countries far beyond the limits of its originating and more virulent predecessors, the British Isles are visited by so-called influenza, which I maintain is dengue, modified by climate, season, sanitary surroundings, and the individual susceptibility and suitability of the system either for the reception, retention, multiplication, or rapid elimination of the fever microbes. If these microbes are rapidly eliminated from the system through the pores of the skin or the mucous membrane by either profuse perspiration, spontaneous diarrhoea, or mucous discharge from respiratory tract, the disease may terminate as an ordinary attack of influenza; a similar result may be, of course, obtained if the proper pabulum of these microbes is exhausted during the first period of the disease. In either case we have a short febrile disease of about three days' duration with all the symptoms of so-called influenza.

During the afebrile period that follows each crisis a fresh batch of germs is undergoing a process of incubation, which, on coming to maturity in about thirty-six hours, give rise to another relapse and period of sharp fever—that is, if they still find a supply of suitable pabulum in the patient's system—this period lasting till a crisis again occurs; and these relapses may occur over and over again till the patient's system at last affords no more nutriment for the microbes.

During the first period of the disease, I believe, the microbes are being constantly expelled through the pores of the skin and mucous membranes, giving rise to no apparent local irritation except on the face and hands, where the skin has become hardened and pores obstructed by constant exposure. The first sweating crisis carries off myriads of microbes, which pass freely through the open ducts; but in the relapses it is far different, the ducts are now clogged, and the attempts of nature to eliminate the microbes

through skin and mucous membrane give rise to various eruptions, followed by free desquamation; and in each succeeding relapse a different eruption results, as if the expulsion of the microbes incapacitated for some time a certain portion of the skin from acting as an eliminating medium. This theory accounts for the different eruptions on the skin and mucous membranes; also for the rapidly-shifting patches of pulmonary congestion that I have observed in several cases, and which I have long looked on as erythema of the pulmonary mucous membrane, caused by the irritating presence of these microbes. The overwhelming action of these germs upon the nervous system, and the sad havoc wrought by them on that system, must never be overlooked, and call loudly for sustaining treatment of every description. But the limits of this paper preclude my touching, even in the briefest manner, on the treatment which I have found to be most suitable in the various phases of this disease.

ART. XVI.—*The Infectious Diseases (Notification) Act, 1889.*^a By E. MACDOWEL COSGRAVE, M.D., F.K.Q.C.P.; Physician to Cork-street Fever Hospital; Professor of Botany and Zoology. Royal College of Surgeons in Ireland.

ALTHOUGH the subject of notification of infectious diseases was discussed by the State Medicine Section of the Royal Academy of Medicine in Ireland in 1885,^b there seems good reason for recurring to it, as owing to the passing of the Notification of Infectious Diseases Act, 1889, the question has entered upon an entirely new phase. On the last occasion, whilst notification was generally approved, the chief discussion was as to who should notify, and what fee should be paid if the burden of notification was laid upon the medical man.

These points have been settled by the Act, and already steps have been taken by the authorities to adopt the Act, and from 1890 it will be in operation in Dublin.

It may be of use to examine the provisions of the Act in order to form an opinion as to what effect its adoption will have.

Although the present general Act was passed only last year, compulsory notification of infectious disease is no new thing. Fifty-nine Urban Districts in England from time to time adopted

^a Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 25, 1890.

^b Dublin Journal of Medical Science. 1885. Volume LXXX. Page 332.

local Acts, the credit of priority being, I believe, due to Huddersfield. The 67th section of the Huddersfield Waterworks and Improvement Act, 1876, which received her Majesty's assent on July 13th, 1876, required notification, but only in such cases of dangerous infectious diseases as were deemed to be without proper lodging or accommodation for the isolation and treatment of the patient. The occupier or patient had to notify, but if a medical man was in attendance he was bound to fill in and give to the patient or person in charge a printed form, which the patient or person in charge had then to forward to the Sanitary Department. These forms, with postage stamps affixed, were supplied in books free to the medical men practising in the district.

I mention these points somewhat in detail, as it was under this earlier Huddersfield Act that I had two years' experience of compulsory notification. During that time I had frequently to notify, and never experienced any of the difficulties the theoretical opponents of notification apprehend.

The effect of the passing of the general Act of 1889 has already been to cause a great extension of the area over which notification is compulsory.

Up to the middle of January the new Act had been adopted in some 700 sanitary districts^a with a population of about 10,000,000, adding London—in which the adoption of the Act was obligatory—with its population of 3,816,683,^b and the 59 large towns which previously had local Acts, with their population of 3,828,825,^c and it will be seen that the system of compulsory notification already applies to upwards of 18,000,000 persons, or more than two-thirds of the total population of England and Wales.

By the new Act the local authority of any urban or rural sanitary district in Ireland may adopt the system by passing a resolution after fourteen clear days' notice, by publishing this resolution by advertisement in the local newspapers, with notice of date when Act will come into operation (such date being not less than one month from appearance of first advertisement), and by sending a copy of the resolution to the Local Government Board for Ireland. The steps have already been taken in Dublin, but the preliminary date named for the Act to come into operation in this city has not yet been fixed.

^a Brit. Med. Journal. Jan. 25, 1890.

^b Census. 1881.

^c Census. 1881.

The important clauses of the Act are:—

"3. (a) The head of the family to which such inmate (in this Act referred to as the patient) belongs, and in his default the nearest relatives of the patient present in the building or being in attendance on the patient, and in default of such relatives every person in charge of or in attendance on the patient, and in default of any such person the occupier of the building shall, as soon as he becomes aware that the patient is suffering from an infectious disease to which this Act applies, send notice thereof to the Medical Officer of Health of the district:

"(b) Every medical practitioner attending on or called in to visit the patient shall forthwith, on becoming aware that the patient is suffering from an infectious disease to which this Act applies, send to the Medical Officer of Health for the district a certificate stating the name of the patient, the situation of the building, and the infectious disease from which, in the opinion of such medical practitioner, the patient is suffering."

These paragraphs do not apply to hospitals in which persons suffering from an infectious disease are received, or structures belonging to her Majesty the Queen.

For failure to comply with the provisions of the Act medical men are liable to a fine not exceeding forty shillings.

Certificates are to be provided free to the medical men living in a district in which the Act is adopted.

The fee payable to the medical man for notifying a case of infectious disease is 2s. 6d. for a private case, and 1s. for a case occurring in his practice as medical officer of any public body or institution.

The following explanation of the term "infectious disease" is given in the Act. It:—

"Means any of the following diseases, namely, small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina or scarlet fever, and the fevers known by any of the following names—typhus, typhoid, enteric, relapsing, continued, or puerperal."

Other infectious diseases may be added permanently or temporarily by the sanitary authority.

The advantages of notification from a public health point of view are obvious. If an epidemic, say of scarlatina, breaks out, it is very important that the Medical Officer of Health should stamp it out as early as possible. But how is he to know of the existence

of the epidemic? The first cases are often comparatively light, and it may be some time before one ends fatally; and yet during this time, whilst the earlier cases are running their entire course and the more serious case is progressing to its fatal termination, it is quite possible that the Medical Officer of Health may have no idea that scarlatina has broken out in his district, and infection may be widely spread before the fact of a death from scarlatina. At present we have compulsory notification, but only of deaths, and consequently time is lost just when it is of most value, and before its appearance is made known the disease may have spread so widely that the Medical Officer of Health is unable to follow its ramifications, and all hope of stamping out the epidemic is at an end.

The new Act simply shifts the compulsory notification to an earlier stage, and instead of waiting for a death the Medical Officer of Health is notified of the commencement of the disease. How much better is his position with this information; he can possibly trace out how the disease entered into his district, he can probably find out how many have already come in contact with the patient, and if the sufferer cannot be isolated in his own home he can have him removed to hospital, his room disinfected, and those in the house prevented from spreading the infection in schools or elsewhere. By these means the outbreak of a threatening epidemic may be averted, and that without injury to the patient or his friends. The patient will be better looked after in hospital than at home, and if he is capable of such sentiments will rejoice that he has not been the cause of inflicting injury and danger on others. The friends will be quickly freed from infection, and will be able to return to school and business much more rapidly than if the case had been kept at home.

Mr. John Simon well summed the matter up in the International Medical Congress, 1881, by quoting the famous receipt, "First catch your hare, and then skin it,"^a and observing that for disinfection and isolation to be of effect we must obtain early information of the outbreak, whereabouts and nature of disease, and this can be effected only through an efficient notification of disease. The late E. D. Gray, M.P., "held that infectious disease was very like a fire—if notice of it was not received at once it could not be dealt with."^b

^a Quoted by Dr. J. W. Moore. Transactions, Social Science Congress. Dublin, 1881. P. 542.

^b Transactions, Social Science Congress. 1881. P. 547.

Could these advantages be gained by voluntary notification? I believe the only answer we can give to this question is—certainly not. Some good may be done, as has been the case in Dublin, where the dispensary medical officers have for some time notified, and where the particulars of cases admitted into the fever hospitals have been sent to the Public Health Department. But such notification can never be general, and if not general there must always be the danger that the unnotified cases will be foci for the dissemination of infection. In addition to this, notification when not compulsory cannot be practised without laying the medical attendant open to the charge of a breach of professional trust, as he is voluntarily sending particulars of his patients' illness to the sanitary authority. When notification is compulsory, this objection is removed.

The Medical Officer of Health of Aberdeen writes^a:—"The number of cases reported was twice as many when notification was compulsory as when it was voluntary."

The Medical Officer of Health to Leeds (Dr. Spottiswoode Cameron, who was Medical Officer of Health to Huddersfield during my residence there, and to whose professional skill and administrative ability I have good reason to testify) gives some striking figures illustrating his experience at Leeds. He writes^b:—

"Turning now to the question, what proportion of cases have probably been reported to us at Leeds? I find that during the 52 weeks of the past year, 1889, we have heard, in one way or another, frequently through the death returns, of some 598 cases of scarlet fever, of 21 cases of diphtheria, and of 427 of typhoid or enteric fever. During the same period 111 deaths were registered from scarlet fever, 15 from diphtheria, and 111 from typhoid fever. Supposing the fatal cases to have been 5 per cent. in scarlet fever, and 10 per cent. in typhoid, the numbers heard of should have been not 598 and 427, but 2,220 and 1,110 respectively. But to speak of the 'number of cases heard of' is really misleading, as will be seen when we remember that, in a large proportion of them, the information was only obtained from the registration of the patient's death. A good many other cases were only 'heard of' when the patient was convalescent, and a request made that

^a Has the Dual Notification of Infectious Diseases been a Success? By Robert Farquharson, M.D. Sanitary Record. November, 1889.

^b Report on Notification and Hospital Accommodation. By Dr. Spottiswoode Cameron. Leeds, 1889.

we should carry out disinfection. The report books have been examined to ascertain how many of the cases 'heard of' were reported during life. Of 598 cases 'heard of,' in 78 the patient was dead when the inspector visited the house. Of diphtheria, in 14 of the 21 cases heard of, the information came after the patient's death, and in 61, out of 427 cases of typhoid fever, the fatal issue had occurred before we could render assistance. The cases, therefore, heard of during life were not 598, but 520 of scarlet fever, or, with a 5 per cent. mortality, only one case in every five; in typhoid fever, instead of 427, 366, or, with a 10 per cent. mortality, we heard of only one case in three, often only after the opportunity of doing service was passed."

From time to time numerous objections have been urged to compulsory notification, generally by those who have had no practical experience of its working. I regret to say that I myself expended two guineas in opposing the notification clause in the Huddersfield Bill. I stayed long enough in the town to regret, not only my guineas, but also my opposition to an Act, the benefits of which I soon recognised.

One of the most extraordinary objections to the Act is that it interferes with the liberty of the subject; when discussed at the Social Science Congress, 1881, in Dublin, a delegate from the Vigilance Association for the Defence of Personal Rights came over from London to oppose it. It is generally considered that when the exercise of one man's liberty interferes with the liberty of others it is degenerating into licence. Even if a man has a personal right to have an infectious disease, we have a personal right to refuse to have it communicated to us, and it is in defence of *this* personal right that the Act is intended.

A more widely urged objection is that notification is a breach of professional confidence. Dr. Cameron* answers this objection very well:—"Is it not a breach of professional confidence should he notify? Certainly, if he do so of his own mere motion, and without the authority of the patient or his guardian. So-called 'Voluntary Notification' can only be done by consent. The case is entirely different when the legislature steps in and insists upon notification. There is then no breach of confidence on the part of the practitioner. . . . The compulsion shifts the responsibility from his shoulders to the broad ones of the community."

* Hints as to the Working of the Infectious Disease (Notification) Act, 1889. By J. Spottiswoode Cameron, M.D.

Besides, the medical man can always explain to the patient that the information is of a strictly confidential kind, and will not go beyond the health office, and that the duty of the medical officer is to see for himself, or be satisfied by others, that sufficient isolation is being practised, and due precautions taken against the spread of infection. I would venture to suggest to the Medical Officer of Health that he should supply medical men with leaflets explaining the provisions of the Act, and the compulsion of notifying which rests on the medical man.

Nobody complains of having to notify the cause of death, and yet this is not even kept secret, as anyone can ascertain the entry for a shilling. To certify as to death from scarlatina brings down the health officials and their disinfectants just as surely as notifying the existence of the disease.

Another objection is that the Act will lead to concealment of disease, and prevent the assistance of medical men being sought. There is a great deal of truth in this, but it applies to disinfecting. At present the fear of disinfecting leads to concealment of disease; the new Act imposes a penalty, and so will ultimately lessen the concealment. This is the great advantage of dual notification—if a medical man is not called in, the onus of notification still rests upon the person in charge of the patient.

W. H. Michael, Q.C., says*—"As to declining to call in medical assistance, it must be remembered that in such a case the duty still remains charged in the occupier to forward on his own account the certificate, and if medical assistance were declined on this ground, and fatal consequences ensued, the person so offending would be liable to a criminal indictment for neglect."

Injury to business is also urged as an objection. This objection is a confession that without notification the business would be carried on, in many cases with the certainty of spreading infection. When a disease is allowed to spread injury to business often results, but early notification, and prompt removal to hospital, with disinfection of a single room, will allow the business to go on as usual. A case heard Sept. 13th, 1889, shows the danger of the present system. A dealer in old clothes, who had positively refused to allow his child to be removed to hospital for scarlatina, was convicted for having allowed the child when peeling to play with other children in the street, and to be about amongst the second-hand clothes in his shop. Scarlatina in milk shops also is not unknown.

* Transactions Social Science Congress, 1881. P. 538.

A more serious obstacle is the difficulty of recognising obscure cases, and that there is no provision for reporting cases that are doubtful. Dr. Cameron, in Huddersfield, got medical men to mark doubtful cases with a note of interrogation, which got over the difficulty to some extent, but certainly the Act ought to make provision for such cases. To report wrongly or to postpone reporting—each is a danger.

In some places the want of hospital accommodation is a difficulty. This ought not to be a trouble in Dublin, as there are a larger proportion of fever beds to population than in most English towns. Dr. Thorne Thorne estimates that in manufacturing towns one bed per 1,000 of the population would be required. Dr. Cameron^a asked the medical officers of 42 towns in which notification is already compulsory, whether they considered Dr. Thorne Thorne's estimate too large—30 replied in the negative, and 9 in the affirmative. Most of those replying in the affirmative were, however, not large manufacturing towns. At present in Dublin we have nearly double this amount, or about one bed for each 500 of the population, but I hope hospitals will be prevented from mixing infectious diseases. This should be considered exposing in an infectious condition under the Public Health Act.

The smallness of the fee is sometimes objected to. From the point of view of a medical man, a guinea fee would be more satisfactory; but, from a rate-payer's point of view, it would not be so pleasant. It must be remembered that the payment of a fee, no matter how small, is a concession. Certificates of death and of vaccination have to be given without any fee at all. There are already heavy charges upon the funds available for sanitary purposes, and I do not think a larger fee could fairly be demanded. At any rate the fee cannot be altered now, as it is fixed by the Act.

It has been said that notification has increased the death-rate. A more extraordinary and unfounded statement has seldom been made. In some towns the death-rate has fallen, in a few it has risen; but notification is too recent, and not sufficiently widespread, to allow of any certain effect being traced on so fluctuating a quantity as the death-rate from infectious diseases, but the apparent tendency is to a decrease. The Medical Officer for Birkenhead writes^b:—"The extraordinary allegation that compul-

^a Dr. Cameron, Report on Notification and Hospital Accommodation. P. 5.

^b Quoted by Prof. Corfield in *The Times*.

sory notification in places where it exists has increased the mortality from diseases requiring to be notified is certainly not borne out by facts in Birkenhead; the mortality from diseases requiring to be notified has, since compulsory notification came into force in the borough, so much decreased that it has been less than half the average of the corresponding mortality of recent years."

Another objection is that medical men will be liable to actions for notifying wrongly. Up to the present this objection is theoretical, no such action having taken place. Judges would probably require to be convinced of absence of *bona fides*, or of reasonable skill, before allowing a medical man to be punished for such a mistake. At any rate the fear of this possible injury may induce medical students to devote more time to the study of infectious diseases than they generally do at present.

What may be expected from the Act? From my own experience and reading I believe it will have a very good effect. It will at first be difficult to work, and some friction may be expected, but the difficulty will not fall on the notifying medical men, but on the public health department. It will add greatly to the Medical Officer of Health's responsibility, but he possesses plenty of tact, and can be trusted to keep down all unnecessary friction. The real difficulty will be with his subordinates, whether they will prove fit to administer the Act. It will take all the administrative power of the Medical Officer of Health to manage this. It is plain that the sanitary officers should be properly qualified; their work under the Public Health (Ireland) Act is at present responsible, but in future, under the new Act, it will be much more so. Having been a faithful servant for many years, or a faithful political supporter for whom no other post can be found, ought not to be sufficient qualifications. All employed should be compelled to go through a course of study, and pass an examination held by some independent body before being allowed to commence work.

I deal with this point as notification *per se* is valueless, it is the use made of the notification which is of value, and much of the popularity of the Act—at first at all events—will depend upon the manner in which use is made of the notifications, and its success is largely in the hands of those employed to carry it out.

One thing I am sure of is that the Medical Officer of Health can depend upon the loyal co-operation of the medical men of his district, and they will try to popularise the Act by explaining its provisions to their patients, and showing them how important it is

for the welfare of the community that notification and isolation should be practised.

It has been said that Medical Officers of Health like the Act because it gives them great power, and that the bulk of the profession disapprove of it. In Huddersfield we all subscribed to oppose the clause of the Bill, and yet, during the two years I was under its provisions I never heard a medical man say a word against it, and Dr. Cameron, who, after carrying out the Act for twelve years at Huddersfield, has lately been appointed to Leeds, in writing of the practical difficulties of carrying out the Act, says, "No medical man gives us any trouble;" and again, "The medical profession have loyally carried out its provisions, and have also been always willing to give me what assistance I require and what information I seek."^a

The Medical Officer of Health for Edinburgh (where notification was introduced in 1879), sums up the advantage as follows:—"The infectious clause has been loyally obeyed by the profession, and no complaints have reached the authorities from the powerful medical school, the press, or the general body of practitioners. Lodging-house keepers and hotel proprietors are thankful to be relieved of responsibility, schools have gratefully acknowledged the benefit of the new arrangement, and the authorities the being able to determine every morning the state of the public health as regards infectious diseases, and to track out satisfactorily the nature of mysterious outbreaks of some of them."^b

I trust that when the Academy comes to review the working of the Act, our Medical Officer of Health will be able to use similar words.

ART. XVII.—*Medico-Statistical History of the Army of Occupation in Egypt, 1882-87 inclusive.* By BRIGADE-SURGEON ALBERT A. GORE, M.D., Army Medical Staff.

ON July 17th, 1882, the British troops arrived in Egypt, 13,466 officers and men, average strength. Admissions, 14,392; deaths, 551; invalided, 3,229. Rates per 1,000 for period, 1,068·7, 40·92, and 239·78 respectively. The military operations were confined to Lower Egypt.

^a Hints as to Working of the Infectious Disease (Notification) Act. P. 27.

^b Quoted by Dr. Farquharson in Sanitary Record. Nov., 1889. See also Transactions, Social Science Congress, Nottingham. 1882.

	Total Admissions	Deaths	Invalide
Aggregate of annual average strengths, 46,490	66,069	1,668	6,622
<i>I.—General Diseases.—Febrile Group.</i>			
Eruptive fevers { Small-pox	145	15	—
{ Other	72	1	—
Continued " { Enteric	2,361	799	701
{ Other	9,508	10	453
Yellow fever	—	—	—
Paroxysmal	1,278	24	187
Cholera	183	139	—
Other diseases	112	6	6
Total	12,680	993	1,347
<i>Constitutional Group.</i>			
Rheumatism	1,485	4	164
Primary Syphilis	6,546	—	101
Secondary "	1,221	1	104
Tubercular Disease	265	46	142
Scurvy and Purpura	12	—	4
Other diseases	179	1	17
Total	9,708	52	542
<i>II.—Local Diseases.</i>			
Nervous System	1,201	63	336
Eye	4,066	—	440
Other Organs of Special Sense	613	—	55
Circulatory System	720	17	246
Absorbent	837	—	52
Ductless Glands	3	—	—
Respiratory System	1,887	63	112
Digestive	14,164	273	1,637
Urinary System { Gonorrhoea	4,090	—	32
{ Sequelæ of "	297	1	13
{ Other diseases	325	6	24
Generative System	1,692	—	32
Organs of Locomotion	304	1	48
Cellular Tissue	1,299	—	75
Cutaneous System	3,088	—	85
<i>III.—Debility</i>	3,078	14	1,162
<i>IV.—Poisons</i>	192	12	1
<i>V.—Injuries</i>			
General	82	62	6
Local	3,987	60	146
In action	388	121	332
No appreciable disease	113	—	—
Grand Total	66,069	1,668	6,622

Ratio per 1,000.

Year	Admissions	Deaths	Invalided	Invalide finally discharged the Service	Constantly sick
1882	2,322·0	88·90	520·97	7·90	301·97
1883	1,139·0	34·82	84·71	22·29	76·07
1884	1,266·2	11·59	49·47	25·51	76·85
1885	1,522·0	28·98	152·40	49·30	152·40
1886	1,271·0	36·88	83·89	24·40	74·17
1887	1,10·04	15·36	26·74	17·26	69·26
Average	1,437·4	36·09	103·03	24·44	107·45

1883 was a period of settled occupation after a campaign. The troops new to the country, or only just becoming acclimatised; barracks in a state of transition from the normal, unsanitary condition of Egyptian buildings to a state more suitable and healthy. The hospitals at Cairo, Abbassiyeh, and Ramleh, Alexandria suitable to the wants of the sick, no overcrowding; the water filtered before distribution, and the dry-earth system of conservancy in use throughout the command. Regular bathing parades and clothing of grey serge for the summer months; rations and cooking satisfactory; average annual strength, 7,897; admissions, 8,995; deaths, 275; constantly sick, 600·74; an annual ratio per 1,000 of 1,139·0, 34·82, and 76·07 respectively. Epidemic cholera broke out at Damietta on 22nd of June. The first case occurred amongst the troops on 21st of July, causing 183 admissions and 139 deaths; percentage of deaths to attacks, 75·95. The prevailing diseases in the command were enteric and other continued fevers, cholera, dysentery, diarrhoea, venereal.

1884.—Average strength, 6,468; admissions, 8,190; deaths, 75; constantly sick, 497·68; ratios per 1,000 of 1,266·2, 11·59, and 76·85. These ratios were influenced somewhat by the Eastern Soudan Expeditionary Force in the early part of the year, and the commencement of the Nile Expedition later. The same classes of disease prevailed;

1885.—The average annual strength rose to 9,593, the admissions to hospital to 14,601. There were 278 deaths, and 769·71 were

constantly sick. Ratios per 1,000 of admissions, 1,522·0; deaths, 28·98; and constantly inefficient through sickness, 80·23. There were in Lower Egypt 8,013, on the frontier 1,115, at Suakim 465. The ratios of sickness and mortality were all very high, particularly those of the troops at Suakim, where sunstroke and heat exhaustion and enteric fever were the chief diseases. On the frontier the principal diseases were fevers, including many of enteric, dysentery, and diarrhoea. In Lower Egypt the same, with venereal affections. Most of the men had gone through a most arduous campaign, and those who returned from Suakim took a long time to get over the effects of climate experienced there. On the frontier the highest ratios of admissions and mortality were in the 1st Yorkshire Regiment—1,684·5 and 57·14 per 1,000; the lowest in the 1st Royal West Kent—945·3 admissions. At Suakim the 1st Shropshire Regiment had a ratio of admissions 2,461·8, and mortality of 96·15!

Annual Ratios per 1,000 at the three Stations.

	Admissions	Deaths	Constantly sick
Lower Egypt	- 1,499·6	20·72	81·35
Frontier Field Force	- 1,339·0	28·70	69·85
Suakim	- 2,346·2	88·17	86·82
Average	- 1,522·0	24·91	80·23

1886.—Active operations closed on the 22nd January. The average annual strength was 11,062; admissions, 14,070; deaths, 408; invalided, 928. The following table shows the composition, stations, and admissions per 1,000. Average constantly sick, Lower Egypt, 601·38; on the frontier, 205·30; at Suakim, 13·86; total, 820·54:—

Ratios per 1,000.

	Admissions	Deaths	Invalids sent Home	Constantly sick
Lower Egypt	- 1,335·7	19·73	83·08	81·84
Frontier	- 1,161·2	70·51		
Suakim	- 886·2	23·70	128·00	65·69
Average	- 1,271·9	36·88	83·89	74·17

Of the invalids sent home only 24·40 were finally discharged the service. The principal feature was, that while the admission ratio had declined 250·1 per 1,000, and constant inefficiency through

sickness 6·06, the mortality ratio had increased by 7·90, and of 10·67 as compared with the three previous years. The average sick time to each soldier was 27·07 days, and the average duration of each case of sickness 21·28 days. The rate of constant inefficiency was highest in the artillery, next in the infantry, then in the cavalry, engineers, and departmental corps. In the infantry the regiment showing the highest ratio of admissions per 1,000 was the 1st Dorsetshire—1,758·5, and of deaths 157·17. With regard to the influence of age and service in the command, the ratio per 1,000 of admissions among men under 20 was 996·8; 20 and 25, 1,489·1; between 25 and 30 years, 1,142·6; declined to 733·7 in the next five years, and to 709·3 over that age. Among the men under one year's service in the command the admission rate was 1,554·7 per 1,000; in second year, 1,464·1; in third, 699·6; in fourth year, 683·0. The death-rate in the first year in the command 37·27 per 1,000; in the second, 48·78; in the third, 30·71; and in the fourth, 12·79.

1887.—The average strength had now fallen to 5,272. The stations occupied were Cairo, Abbassiyeh, Alexandria, and, for a short time, Assiout; in Upper Egypt Assouan, where, at the commencement of the year, the garrison was 1,994, reduced in March to 842, and in June to 91. By December the troops in Egypt were further reduced to 4,440. At the beginning of the year the garrison consisted of the 20th Hussars, 1 battery R.H.A., 5 batteries of garrison artillery, Royal Engineers, 8 battalions of infantry, some mounted infantry, detachments, departmental corps, and garrison staff; 1 horse and 4 garrison batteries were withdrawn, and five battalions of infantry. There were 5,821 admissions to hospital, 81 deaths, 141 invalids, and 91 finally discharged the service; average daily sick, 365·19.

Ratios per 1,000.

	Admissions	Deaths	Invalided	Average Constantly sick
Lower Egypt	- 1,129·3	14·09	26·74	{ 71·56
Assouan -	- 831·5	26·96		{ 44·45
Total Force	- 1,104·4	15·63	26·74	69·26

In Lower Egypt the admission rate had decreased by 206·4 per 1,000, the mortality by 5·64, and the rate of constant inefficiency through sickness by 10·28, and on the frontier by 329·7, 43·55, and 14·15 respectively, attributed to "the more careful selection of the

men, none being allowed to serve there in the hot weather who were under 22 years of age, and to their being relieved every six weeks during that season."

Among the corps which served the whole year in the command the highest rate of admissions—1,674·0 per 1,000—occurred in the 1st Battalion Welsh Regiment, and the greatest amount of inefficiency through sickness, which reached 92·25 per 1,000. The lowest ratio was 57·61 in the 20th Hussars, which had no mortality.

Comparative Statistics, Principal Stations, 1883-84.

	Admissions		Deaths		Constantly Sick	
	1883	1884	1883	1884	1883	1884
Cairo	- 1068·3	1259·7	19·25	8·38	65·17	68·88
Abbassiyeh	- 1046·9	1271·8	19·72	6·90	63·08	73·98
Alexandria	- 1401·4	1219·6	26·44	18·71	97·83	93·59
Command						

In 1883, some patients were transferred from Cairo and Abbassiyeh to Ramleh, Alexandria, for change of air; but, although possessing a milder but damper climate, the change did not prove of any material advantage.

The first of our later campaigns in Egypt, under General Viscount Wolseley, commenced on July 17th, 1882, and terminated on October 12th. In less than two months Arabi's rebellion was suppressed, his troops defeated or captured, and order restored.

Average Strength of Troops	Admissions	Deaths	Invalids	Ratio per 1,000		
				Admissions	Deaths	Invaliding
13,013	7,540	172	2,321	583·3	13·2	178·36

Of the 172 deaths, 74 were from disease, 5 from accident, and 93 killed in action or died of their wounds. Continued fevers accounted for 956 admissions, conjunctivitis and tarsal ophthalmia. 1,139, and diseases of the digestive system 2,725. These were the main causes of inefficiency. There were only 77 cases of ague, 1 of erysipelas and pyæmia, 127 of rheumatism (103 of the acute form). 313 admissions for syphilis, 71 for phthisis, 171 for sunstroke, with but 3 deaths; 1·4 and 1·8 per 1,000 admissions for circulatory and respiratory diseases. Among the diseases of the digestive system dysentery accounted for 698, and 21 deaths (2·2 per cent. of deaths to cases treated), diarrhœa 1,791, and 8 deaths due to the continued effects of great heat, change of temperature, bad and polluted water, indifferent rations, and the great amount of fatigue

and exposure undergone. There were 446 admissions for debility, the great majority being invalided. Injuries received in action caused 378 admissions, a ratio of 29 per 1,000; 7·15 per 1,000 died, 256 were invalided, and 111 returned to duty. The wounds were treated antiseptically, and there was a total absence of infective wound disease.

Five hundred and forty-one officers served in the campaign; 253 were admitted to hospital, 467·6 per 1,000, and 4 died; 192 were invalided. This small battalion thus gave the following ratios per 1,000:—

	Admissions	Deaths	Invalided
Officers	467·6	7·39	354·89
N. C. Officers and Men	583·3	13·21	178·36

Their principal diseases were fevers and sunstroke, 30 of the latter or 55·4 per 1,000, as compared with 13·1 per 1,000 among the non-commissioned officers and men. They, on the other hand, had only 4 admissions for eye affections, probably owing to greater care and attention to cleanliness. 52, or 96·1 per 1,000 of the officers were invalided, as against 29·0 per 1,000 non-commissioned officers and men.

Of 378 wounds received in action, 113 were of the lower extremities, 99 of the upper, and 22 of the head; 11 primary and 36 secondary amputations were performed—total 47; 9 of these died.

In the expeditionary force then in the field enteric fever gave 118 admissions and 27 deaths, attributed to the very impure water at Ramleh, Alexandria, where it at first commenced, and at Cairo chiefly to insanitary conditions, indifferent water and rations, and the recent exposure and fatigue. There was an entire absence of small-pox.

Between the 26th of September, 1882, and 1st of January, 1883, 2 officers and 85 non-commissioned officers and men were admitted to the Royal Victoria Hospital at Netley with enteric fever contracted in Egypt. In 58 dysentery or diarrhœa had preceded the symptoms of the disease, often by several weeks. In 10 chest affections, pneumonia, bronchitis, pleurisy occurred in the course of the fever. In no case did the malarial type of the fever present itself. The disease was in all its essential features the same as observed in Europe. Maximal temperature 106°; in 31 cases 104°; in 37, from 103° to 103·4°; 59 were between 20 and 25; 22 between 25 and 30 years of age. There were only 5 deaths. The treatment consisted briefly in rest, quiet, fluid nourishment in

regulated quantity at proper intervals, the occasional administration of quinine when the temperature was high and persistent, opium and bismuth when the diarrhoea was excessive, and turpentine to combat excessive tympanites, and a rather more free administration of stimulants for obvious reasons.

At Cairo the troops suffered most from continued fever, prevalent at all times, caused by exposure to the sun, bad water, unwholesome food, and bad liquor. Towards the end of October enteric prevailed in an epidemic form, was of a severe type, in many cases proving fatal in five or six days, becoming less severe, with a large proportion of recoveries in November and December. The diarrhoea was invariably attended with bilious derangement and dyspeptic symptoms. In all the enteric cases the convalescence was slow, owing to impaired vitality, resulting from hard service in the field. In November and December, when the weather became cold, there were many admissions for jaundice, due to hepatic congestion, and few of the ophthalmic cases passed beyond the stage of conjunctivitis. They were treated in marquees under the shade of trees, and did admirably. Venereal became prevalent soon after the troops settled down. The troops generally wore European summer clothing.

The usual field ration—viz., meat, 1 lb.; bread, $1\frac{1}{4}$ lb.; fresh vegetables, $\frac{1}{2}$ lb.; tea, $\frac{1}{8}$ oz.; coffee, $\frac{1}{8}$ oz.; sugar, 2 oz.; salt, $\frac{1}{2}$ oz.; pepper, $\frac{1}{8}$ oz.—was at first issued; next a modified ration—meat, 1 lb.; bread, 12 oz.; Erbswurst, 1 tin; rice, 4 oz.; potatoes, 8 oz.; vegetables, 4 oz.; tea, $\frac{1}{8}$ oz.; coffee, $\frac{1}{8}$ oz.; sugar, $2\frac{1}{4}$ oz.; lime juice, $\frac{1}{2}$ oz.; salt, $\frac{1}{2}$ oz.; pepper, $\frac{1}{8}$ oz.; $1\frac{1}{4}$ lb. meat, when Erbswurst was not issued. Finally, after active operations ceased, the occupation ration—less complicated:—Fresh meat, 1 lb.; bread, 1 lb.; rice, 2 oz.; potatoes, 12 oz.; vegetables, 4 oz.; pepper, $\frac{1}{8}$ oz.; salt, $\frac{1}{2}$ oz.; tea, $\frac{1}{8}$ oz.; coffee, $\frac{1}{8}$ oz.; sugar, $2\frac{1}{4}$ oz.

The following were the sanitary precautions recommended:—

1. Before marching in morning, hot tea, with bread or biscuit, to be served.
2. When unusual exertion demanded, a tin of Kopf's Erbswurst between two men.
3. Tea in water bottles for use during the march.
4. On line of march, open order. Coat and shirt to be opened to give free play to chest.
5. Head to be protected always by helmet; abdomen by

Kummerbund; spine by cotton pad. Clothes not to be thrown off after a march.

6. When practicable to sleep under cover.

7. Eyes to be frequently bathed in clean water.

8. Each man to use his own towel only, and wash it daily.

9. Goggles to be worn in the bright sun.

10. Stagnant, tainted water, unripe fruit, underdone vegetables, underdone meat, and internal organs of animals to be avoided.

11. Before marching, feet to be wiped dry, rubbed with soap, and boots then put on. Stockings to be frequently washed; also feet at end of march; blisters to be opened only at end of march by passing a needle through the skin at the edge.

12. Spirits to be issued on recommendation of principal medical officer.

13. Driest ground available to be selected for encamping upon.

14. If preserved vegetables alone procurable, lime-juice to be given invariably with them.

15. Every hospital to have a tent or building for reception of clothes, dirty flannel; filthy clothes to be picked out and properly treated.

16. In transports, kits and clothes to be stowed away after being thoroughly fumigated; directly sick land, to be thoroughly washed, scraped, walls and roofs lime-washed, and between decks constantly fumigated.

17. Principle of separation to be adopted; wounded on one deck, fever on another, &c. If weather permit, sick and wounded to be treated under awnings upon upper deck.

18. Men discharged convalescent from the hospital to be sent on a short sea trip.

19. Following special field ration advised:—Meat, 1 lb. 4 oz.; bread, 1 lb.; potatoes, 8 oz.; tea, $\frac{1}{2}$ oz.; lime juice, $\frac{1}{2}$ oz.; sugar, $\frac{1}{4}$ oz.

Between February 15th and April 6th, 1884, a force under Sir Gerald Graham, largely augmented from Egypt, was operating in the Eastern Soudan for the relief of Tokar, with its base at Suakim. Average strength, 4,018; admitted to hospital, 512; killed in action, 126; rate per 1,000 admissions, 127.42; deaths, 31.36. The prevailing admissions were—Continued fevers, 39; primary syphilis, 35; diseases of the digestive system, 67; rheumatism, 11; nervous system, 11; respiratory, 12; cellular tissue, 14; cutaneous, 23; debility, 10; local injuries, 43. Severe actions were fought at Bir-el-Teb and Tamaai. A second expedition was

despatched in 1885, operating there from March 1st to May 14th. Average strength, 7,235; admissions, 2,146; deaths, 104 (including 47 killed in action); rates per 1,000, 296·6 and 14·37. There were 99 wounded in action, 13·7 per 1,000, with 6·50 per 1,000 deaths. The principal diseases were enteric, 88, and 11 deaths; other continued fevers, 129; paroxysmal fever, 38; rheumatism, 78; primary syphilis, 181; secondary, 41; diseases of nervous system, 226; eye, 49; absorbent, 31; respiratory, 31; digestive, 622; gonorrhœa, 59; cellular tissue, 58; cutaneous, 83.

During the months of March and April the health of the troops was exceptionally good, with only 4·3 per cent. of sick. In the early part of the campaign the most prevalent diseases were diarrhœa, sun fever, and nervous exhaustion. A large number of venereal cases were developed on the voyage out. On March 4th, the sick in hospital numbered 1 officer and 107 men, rising gradually to 27 and 604 on May 11th. 39 officers and 418 men were invalided to England; 1 officer and 169 to Suez. where, during both expeditions, a base hospital was organised for 200 sick. Total killed, 5 officers and 49 men; wounded, 5 officers and 116 men; missing, 1 officer and 40 men. An Australian and Indian contingent assisted—6,500 followers accompanied the latter. In the Indian hospital, 82 Europeans, 669 natives of India, and 133 Arabs were treated; and, as "out-patients," 1,042 natives of India, 72 Europeans, and 116 Arabs. Prevailing diseases—Ague, primary syphilis, dysentery, ulcers, abscess, bronchitis, rheumatism, pneumonia, diarrhœa, conjunctivitis.

The large amount of ague and dysentery amongst the natives of India, as compared with other diseases, was attributed to the porous soil rendered dry and moist by the flow and ebb of the tide, the same impregnated with human fæces and camel urine, an occasional rain moistening the air or filthy dust, or a breeze bringing the poisonous germs of decomposition from dead animals to the camp. The percentage of deaths was—For Arabs, 1·39; Europeans treated, 68; natives of India, 17. 6 Europeans, 33 Arabs, and 212 natives of India were invalided.

*Average Days in Hospital and Admissions per 1,000 of Strength—
Indian Contingent.*

	Europeans	Arabs	Natives of India
Average days in Hospital	- 10·06	13·35	13·21
Average admissions to Hospital	- 286·20	160·31	106·36

(To be continued).

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lectures on the Diseases of the Nose and Throat. By CHARLES E. SAJOUS, M.D.; Lecturer on Rhinology and Laryngology in the Jefferson Medical College; ex-President of the Philadelphia Laryngological Society, &c. Illustrated with 100 Chromo-Lithographs, from Oil Paintings by the Author, and 93 Engravings on Wood. Philadelphia and London: F. A. Davis. 1889. Pp. 439.

WE congratulate the author on the work before us, every page of which clearly shows that he is a master in the specialty of which he treats. The book does not pretend to be an exhaustive compendium of the works of others, but it gives in simple and clear language the experience of a thoroughly practical man. The simplicity of the style and the absence of unnecessary technicalities in the language make the volume one which it is a pleasure to read—a pleasure enhanced by the excellent type and the good paper employed in the printing.

The book is divided into two parts—the first dealing with the nose, the second with the pharynx and larynx. The first part is the longer and the more fully worked out, and absorbs 238 pages; while the larynx and pharynx occupy only 170 pages, the remainder being devoted to a pharmacopœial appendix and an index.

It is unavoidable in a work of this kind that the greater portion of it should consist of well-known facts, although dressed up in new and attractive garbs. But this is relieved throughout by original observations, and by the record of the personal experiences of the author, which deserve attention, and which make the book a valuable addition to our libraries.

In the chapter on Illumination the author speaks hopefully of the future of the electric light, which will, at an early date, supplement all others. But, in the meantime, many drawbacks militate against its use. "The invention of the incandescent lamp, and the improvements in dynamos, did away with many of the objectionable

features. but it is only lately that the last obstacle, which rendered its employment in laryngoscopy impracticable, was overcome." This has been effected by the invention of accumulators; but unfortunately, "the large number of accumulators necessary to overcome the resistance of the lamp makes their frequent transportation for the purpose of re-charging an annoying feature. For our purpose, the advantages of the storage battery can hardly be appreciated, and it is to be hoped that the obstacles yet militating against its general use will soon be overcome."

Whilst we are thus obliged at present to wait upon the future developments of electricity, we are compelled to fall back upon the older methods of illumination, the best of which is undoubtedly gas. The author suggests a method which he has lately been using, by means of which the gas-light is made much brighter, whiter, and steadier. This is accomplished by causing the gas to pass through a metallic vessel containing "albo-carbon." The gas-light is thus rendered almost as white as electricity, it radiates less heat than ordinary gas or oil, and it "requires no attention further than the occasional renewal of the carbon as it is consumed, and is less expensive" than any of the ordinary methods.

In describing the method of employing the nasal douche, the author remarks on the prejudice which has arisen against its use, through the fact that, in conjunction with its employment, inflammation of the Eustachian tubes has taken place, followed in some cases by the gravest results. The author, notwithstanding the large number of cases in which he has prescribed it in hospital and private practice, has yet to see any deleterious effect following its use. Certain rules must, however, be observed in order to guard against harm resulting. These he enumerates:—1. A positive diagnosis must be made. 2. The liquid must not be colder than 90°, but the nearer the temperature of the blood is approached the better. 3. The liquid must not be forced through the nasal cavities with too much power. "Holding the vessel with its bottom on a plane with the forehead suffices to produce a stream well calculated to bathe gently the nasal passages." We have found the height of an ordinary mantel-shelf answer admirably, the patient being seated on a chair in front of it with a basin on the knees to catch the lotion as it pours from the nose. 4. Swallowing should be carefully avoided while the douche is being used. "This act, inducing temporary dilatation of the Eustachian tubes, would cause the fluid to penetrate into them. The cases in which middle ear

troubles were reported as being caused by the use of the douche were probably due to neglect of this rule. 5. The liquid should always be rendered alkaline. Bicarbonate of sodium, baborate of sodium, and chlorate of potassium are the best agents for the purpose—one teaspoonful of either being thoroughly dissolved in a pint of water."

In Chapter V., under the head of Therapeutics of the Nasal Cavities, the author classifies the various remedies he has found useful in nasal diseases, stating the various indications which call for the use of one or the other of them. This will be found of much practical use.

At page 140 the author describes the surgical treatment of nasal polypi by the method most frequently employed—namely, evulsion by forceps. We entirely agree with him when he says—"Although this method presents the advantages of rapidity, it is certainly a brutal and bloody one, and more calculated to inspire the patient with a desire to keep all future polypi which may recur than to apply for relief." The use of the snare, with the subsequent application of the galvano-cautery or of some caustic acid to the site of the tumour, is much to be preferred.

Chapter X. deals with hay fever, under the new name—proposed by the author—of "Periodical Hyperæsthetic Rhinitis." He lays down three conditions as essential factors in the production of an access of hay fever—"Firstly, an external irritant; secondly, a predisposition on the part of the system to become influenced by this irritant; and, thirdly, a vulnerable or sensitive area through which the system becomes influenced by the irritant." Under the second head he shows that in the majority of cases there is an inherited predisposition to the affection. In those cases in which no hereditary history could be traced, the author has discovered that they all had suffered to an unusual extent from previous illnesses, all of which presented marked neurotic elements, and he then asks—"Is it not probable that a functional derangement of the nerve centres resulted, and that they were thus rendered more sensitive to influences which, had they been in their normal state, would not have affected them?" Under the third head he calls attention to what are known as the "sensitive areas" in the nose. First are the posterior ends of the inferior turbinated bones and the corresponding portions of the septum, described by Dr. J. N. Mackenzie, of Baltimore; secondly, the mucous membrane covering the anterior extremities of the inferior turbinated bones, which, when in a diseased condition, can originate various reflex neuræses, as

demonstrated by the late Professor Hack, of Freiburg, in Baden; and, thirdly, an area in the anterior portion of the nasal cavity, near the angle forming the anterior boundary of the vestibule, and located on the nasal wall as well as on the septum, and which area the author considers is of no less importance than that of Dr. J. N. Mackenzie.

The treatment advocated by the author, and which we have frequently found to be the most satisfactory in its results, is the natural outcome of these views as to the pathology of hay fever. The first indication is to ascertain, by careful examination of the nasal chambers, whether the condition which gave rise to the hyperæsthesia is sufficiently marked to receive special attention. "In the great majority of cases a simple chronic rhinitis exists, with a tendency to frequent or permanent turgescence of the mucous membrane. In others we have true hypertrophy, involving either the anterior or posterior portions of the nasal cavities, or both. Occasionally we find polypi, which occlude more or less one or both cavities, while a deviated or thickened septum may keep up a marked irritation and constitute a serious obstacle to a subsequent thorough treatment. When these, or any other abnormal conditions compromising mechanically the lumen of the cavities, are present, they should first receive attention, and the nasal cavities returned as nearly as possible to their normal state. If the treatment employed be one of a destructive nature, the organic changes induced by it in the mucous membrane proper will often be sufficient to annul its hyperæsthesia."

In cases where this preliminary rectification of the cavities fails to remove the hyperæsthesia, or when such preliminary treatment is not required, the next indication is to destroy the diseased mucous membrane over the sensitive area or areas implicated. This is best done by means of the galvano-cautery loop, or if this be not available caustic acids may be used, but they are far inferior in their action to the cautery. The method to be employed in systematically dealing with these hyperæsthetic areas is admirably described in the pages before us.

When reflex asthma exists, the author believes that this is due to hyperæsthesia of the posterior area in the majority of cases—the head symptoms being due to the implication of the anterior or middle sensitive areas. "A mild case of hay fever, complicated with reflex asthma, may be due solely to hyperæsthesia of the middle area, and may be cured by a treatment limited to it. Here.

the asthma is due to the turgescence of the posterior area occurring as a result of the inflammatory process, while the head symptoms are induced . . . through implication of the nasal nerve in the hyperæsthetic region. I am of the opinion, however, that it is always best to include the posterior ends of the turbinated bodies in the treatment." The author recommends this local treatment to be carried out at least two months before the expected attack, and in this way an access of the disease may be avoided. The usual palliative measures are discussed, and the means for improving the general health of the patient are described. Valuable as these means are as adjuncts, they too frequently fail, because the local treatment is neglected, and dependence is laid on these palliative measures alone.

Chapters XIII. to XX., inclusive, deal with the pharynx, tonsils and soft palate, occupying about 60 pages, whilst about 100 pages are given to the larynx. Both these portions are simply and clearly written, and our only regret is that a proportionately greater amount of space has not been accorded to them.

On the whole, we can strongly recommend this book to the profession. It is one of the most practical and readable books on the subject with which we have met, and we notice all through that the advice given as to treatment is the result of much experience and thought, and may be thoroughly depended on. We cannot close this review without calling special attention to what is, perhaps, one of the most noticeable features of the work—namely, the excellence of the illustrations. The woodcuts are good and clear, but what most excites admiration are the coloured plates. The author informs us in the preface that he has performed the part of artist as well as anatomist, and that ninety-seven out of the hundred illustrations are original. We congratulate him on his artistic skill, for he shows that he is as great an adept with the pencil and the brush as the writing proves him to be with the pen.

Habitual Drunkards. Documents Relating to Proposed Legislation (limited to Scotland) for Inebriety, caused by Disease, which is Curable under Treatment. Edinburgh: Oliver & Boyd. 1890. 8vo. Pp. 60.

THIS pamphlet contains a number of papers on the subject of improved legislation for the treatment of inebriety. There is a draft bill for the establishment of Restorative Homes in Scotland

for Inebriates, and resolutions of various societies on the subject. The bulk of the pamphlet, and the most valuable part is taken up with a report of a discussion on the proposed bill in the Medico-Chirurgical Society of Edinburgh. The speeches of Professor Grainger Stewart, Dr. Peddie, Dr. Clouston, Dr. Tuke, and others, contain a great amount of most valuable observation and reflection.

No one can read the pamphlet without being impressed with the urgent necessity that exists for further legislation on the subject.

RECENT WORKS ON CLIMATOLOGY.

1. *Wanderings in Search of Health, or Medical and Meteorological Notes on various Foreign Health-Resorts.* By H. COUPLAND TAYLOR, M.D., F.R. Met. Soc., &c. London: H. K. Lewis. 1890. 8vo. Pp. 259.
2. *Egypt as a Winter Resort.* By F. M. SANDWICH, F.R.G.S.; formerly Vice-Director of the Sanitary Department of Egypt. London: Kegan Paul, Trench & Co. 1889. 8vo. Pp. 153.

By a happy coincidence two excellent contributions to the literature of Medical Climatology have recently issued from the press. They are complementary to each other, and are both written in a pleasant, descriptive style, which is very attractive to the general reader as well as to the physician who is called upon to recommend a suitable climate.

1. "Wanderings in Search of Health" is the pathetic title which Dr. Coupland Taylor has chosen for the first of the two volumes before us. Equally pathetic is the dedication of his book—"Conjugi meæ dilectissimæ, itinerum parti magnæ et comiti, eorum hæc relicta dedico." And on the title-page he conveys that the book has been written by one who himself is an invalid, and who has been abroad for several years in search of health, by quoting Sir Philip Sidney's words: "All is but lip wisdom that wants experience." It is, indeed, the special charm of this work that nearly every page embodies the author's personal impressions of, and his experiences in, various localities visited by him in health and in sickness through a long series of years.

An introduction, containing sound, common-sense remarks on

the choice of a health-resort, is followed by seven chapters, each devoted to a special subject. In the first chapter Dr. Taylor considers very fully and from a practical point of view the ocean as a health-resort in phthisis. The advantages and drawbacks of a long sea voyage are candidly and clearly stated, and the chapter ends with a novel table of the weights of passengers taken at intervals of about a fortnight on a voyage from England to Australia. The most notable feature in this table is the great fall in weight both in the healthy and in the consumptive which invariably takes place in the tropics, and the sharp rebound afterwards in the temperate region of the southern hemisphere.

The headings of the subsequent chapters are respectively—a summer in the Engadine; a winter at Davos; Madeira; a winter in the Canary Islands; the Western Riviera; and some miscellaneous health-resorts, including Bournemouth, Arcachon, Biarritz, Pau, Eaux Bonnes, Cauterets, Bagnères de Luchon, Meran and Algiers. This chapter also contains a brief notice of health-resorts which are still further afield, such as Colorado and California in America, Australia and New Zealand. It will from this enumeration be seen that a great deal of ground is covered by Dr. Taylor in his book. Many of his remarks are worthy of attention—for example, when he says that the importance of constant medical supervision in phthisis, at all events in its more active stages, is, as a rule, scarcely sufficiently recognised. He points out that it is so at Davos, to which fact, in his opinion, some of the credit of that place is due. As a certain fee is charged for the season at Davos by the attending physician, all scruples on his part in constantly looking in upon his patients to see whether they are doing well are avoided, and the patients themselves do not then feel that the physician is paying what might otherwise be regarded as unnecessary visits. The plan in the Riviera is very different, for there a napoleon is charged for each visit, so that a patient is often inclined to do as long as possible without calling in a physician. Dr. Taylor is evidently not in love with the existing arrangements at the health-resorts on the Mediterranean littoral, for at page 175 he criticises in unsparing terms the high charges of the hotel-keepers in the Riviera. Their principle is, according to him, to make the invalid pay as much as possible for every little extra:—"A lady was ordered some chicken-broth one day, at a well-known hotel, by her doctor, and lo! and behold, she was charged *twelve* francs for it. Compare this inattentive and grasping spirit," adds Dr. Taylor, "with the hotels of

Madeira." The conclusion of this sentence is somewhat inelegant, but it is easy to gather the author's meaning.

A few blemishes deface some pages in the book, as when Dr. Taylor says, "If he has not *this stamina* left in him" (page 18); or speaking of an ocean voyage (page 27), "there is one complaint for which it is sometimes recommended, but which generally ends in a dismal failure, and that is dipsomania." Again, at page 46, there is a very confused passage about the cases which are likely to be benefited or the reverse by a summer residence in the Engadine. The sense is quite clear, but the construction of the passage is wrong:—"Here I may shortly consider what cases are likely to benefit by a summer residence in the Engadine, . . . and I may also shortly state in what cases a residence there, and the partaking of the waters of St. Moritz, should be avoided. *Firstly*, in anæmia and chlorosis. These cases are generally wonderfully benefited by a stay there," &c.

On page 19 we find the now obsolete term, in meteorological circles, "an equinoctial gale."

The work is illustrated by five beautiful heliotypes, of Davos in Winter, Madeira, Orotava and the Peak of Teneriffe, Mentone, and Meran in the Tyrol. It is clearly printed on excellent paper and reflects much credit on the firm of Mr. H. K. Lewis, at the same time the printer and publisher of the volume.

2. "Egypt as a Winter Resort" is a complementary work. It supplies the only important omission in Dr. Coupland Taylor's enumeration of health-resorts. Nor could the omission have been better supplied or by an abler pen. The author, Mr. F. M. Sandwith, is a Fellow of the Royal Geographical Society, and was formerly Vice-Director of the Sanitary Department of Egypt, a lengthened residence in which country has made him familiar with its geography, climate, and antiquities to no ordinary extent. Although a facile and pleasant writer, Mr. Sandwith has not hesitated to call to his aid all the modern standard authorities on Egypt, a country which in recent years has played so prominent a part in English history as to attract the special attention of travellers and of authors alike.

Mr. Sandwith's handbook is really a successful attempt to answer the queries of medical friends in England and in the United States as to what manner of patients they should and should not send to Egypt. In the introduction he sums up the advantages

and disadvantages of Cairo and the Nile as a residence for those in search of health; and, having done so, he gives an excellent summary of the cases for the hygienic treatment of which Egypt is suited. He is of opinion that all cases of very advanced or rapidly advancing phthisis of both lungs would be better at or near home; as well as patients with dropsy and all the troublesome sequelæ of heart disease. The introduction also contains valuable suggestions as to outfit and clothing, routes to Egypt, and proposed itinerary when there. The question as to the diseases which are likely to be benefited by wintering in Egypt is considered in fuller detail in an interesting Appendix at the close of the book.

A short chapter on the Suez Canal is followed by two long chapters on Cairo, and by a third on the excursions from that city—especially to the desert:—

“The popular idea in England,” writes Mr. Sandwith, “is that a desert is always one vast plain of dazzling sand, without undulations and without signs of life, and that at every step the luckless traveller must sink ankle-deep in tiring sand. The reality is a series of hills and valleys with innumerable changes of colour, and of lights and shades, and a crisp, firm ground upon which we can walk for miles without getting tired. Moreover, our desert is by no means a perfect desert like the Sahara, devoid of vegetation.

“In February, after the winter rain, green herbs and bushes sprout in the hollows, ravines and valleys, and the flora are at their finest in March and April.” (Pages 72 and 73.)

Chapter VI., on the suburbs of Cairo, contains a full account of the now well-known springs at Helouan-les-Bains, an artificial oasis in the desert, three miles from the right bank of the Nile, and fifteen miles south of Cairo. The table-land of Helouan is in some places saturated with water like a sponge. Water is found at a depth varying from ten inches to ten feet, and has an initial temperature of 77° to 85° Fahr. Up to the present, twelve springs have been discovered, which may be divided into three classes or groups—sulphur, iron, and saline. The sulphur waters resemble those of Aix-les-Bains and Enghien (Paris). There is only one saline spring, the water from which acts a purgative. It is clear, colourless, without odour, slightly salty and bitter; its temperature is 77° F., and its specific gravity is 1·0152. One litre contains 4·0171 grammes of chloride of sodium, 3·1158 grammes of chloride of magnesium, 1·2569 grammes of bicarbonate of calcium, and 1·0798 grammes of sulphate of magnesium, with not quite half

that amount of the sulphates of sodium and alumina. The sulphur springs are, however, by far the most important of the waters of Helouan-aux-Bains, which are especially useful in the treatment of chronic rheumatoid arthritis and of chronic gout, as well as of such skin affections as eczema, acne, prurigo, ecthyma, and scabies. Mr. Sandwith is not happy in his explanation of the chemical processes to which the Helouan water owes its sulphurous properties.

The remaining three chapters are devoted respectively to a graphic description of a voyage up the Nile, to visit Luxor, Thebes, Philæ, or Abu Simbel, and to an account of some of these places and of Alexandria and its suburb, Ramleh. The tourist may go up all the way to Luxor and Assouan by steamer or by dahabiyeh (sailing boat); or he may, if he chooses, save himself 230 miles of river-travelling by taking the train from Cairo to Assiout—thence by river to Luxor, 450 miles south of Cairo, and to Assouan, 133 miles higher up the river than Luxor.

There is one great want in Mr. Sandwith's interesting book, and that is a good map of modern Egypt. Without this it is sometimes difficult to follow the author's geographical description of the country.

Rectal and Anal Surgery. By EDMUND ANDREWS, M.D., LL.D., and EDWARD WYLLYS ANDREWS, A.M., M.D. Second Edition. Chicago: W. T. Keener. 1889. 8vo. Pp. 140.

WE have read this book with interest, not that it teaches anything new of surgery, or anything of surgery extra well, but on account of its sketch of the itinerant "Rectal Specialists" of the new world writers.

The authors pretend to give a *résumé* of all that is practical in rectal surgery; their book falls very short of this. In the first chapter they venture on a description of the anatomy of the rectum, and if it proves anything, it is that their dissections must have been limited in number, and that their knowledge of the literature of the subject is anything but extensive. They give a very meagre description of the folds of the rectum, and their position is quite overlooked.

In the chapter on Piles much space is devoted to the injection method of treatment. The statistics collected by the authors are of no value, as the notes were obtained from patients scattered over the Western States, and most of them were operated on by

"Specialists." It is manifestly unfair to judge a method by hearsay evidence of such questionable value.

The other methods are very poorly described. The only allusion to Verneuil's method of distension shows that the method and its value are alike unknown to the writers, and there is in this chapter no allusion to the vascular tumour, or bleeding pile, and the nitric acid treatment is inaccurately described. In reference to crushing, "Pollick's" pile-crusher is not mentioned, but the authors here introduce a plate of an *écraseur* clamp of their own invention. Why this instrument is introduced we fail to understand, since subsequently the authors say they have abandoned its use in favour of less rude and dangerous appliances.

They speak of *Dr. Cusack*, of Dublin, as being the first to use the cautery. The ordinary pile forceps do not enter into the surgical armamentarium of the authors. In the other chapters there are like omissions.

The work, we have no doubt, is an honest and, we hope, successful effort at exposing and checking quackery in the Western States, but we cannot accord it a place on our book-shelves with the writings of Cripps, Allingham, Ball, or Edward Hamilton.

If ever a third edition of this book is called for, we would recommend the authors, before revising it, to peruse the lectures of the last-named gentleman, as their work would thus contain many points of practical importance which are now conspicuous by their absence.

Clinical Lectures on some Obscure Diseases of the Abdomen.

Delivered at the London Hospital. By SAMUEL FENWICK, M.D. London: Churchill. 1889. Pp. 252.

THE subjects treated of in these lectures are as follows:—1. Perforation of the appendix vermiformis cæci; 2. Stricture of the ileo-cæcal valve; 3. Fæcal abscess; 4. Fæcal abscess connected with the small intestine; 5. Perinephritic abscess; 6. Gastric and perigastric abscess; 7. Tubercular peritonitis in the adult; 8. Cancer of the peritoneum; and 9. Hydatids of the peritoneum.

On each of these subjects the reader will find much information and valuable hints both as to diagnosis and treatment. Dr. Fenwick does not seem very hopeful as to the results which are to be anticipated from laparotomy and washing-out the abdomen in cases of tubercular and cancerous peritonitis.

It would evidently be impossible to give such an analysis of these lectures as would do them justice. We can only recommend them as containing the fruits of long and wide experience, and as indicating the sound judgment and discriminative skill of their eminent author.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. BATTY TUKE, M.D., and G. SIMS WOODHEAD, M.D. Vol. II, Edinburgh and London: Young J. Pentland. 1890. Pp. 279.

THIS second volume fully maintains the high level occupied by its predecessor, and demonstrates the good work which rewards the foundation of institutions for research, such as that which the Edinburgh College has so wisely established.

In this issue of the Reports sixteen papers are contained, all of much interest, although some of them do not seem to have much reference to work done in the laboratory. Of these, we may instance Dr. D. Berry Hart's communication on some anomalous cases of separation and expulsion of the placenta before the birth of the child, and the paper by the same author on an improved method of managing the third stage of labour.

The first eight papers deal with various subjects in the anatomy and pathology of the female sexual organs and the progress of labour. They are all by Dr. Berry Hart except two—one on the anatomy of advanced pregnancy and of labour as studied by means of frozen sections and casts, by A. H. F. Barbour and J. C. Webster; and one by Johnson Symington, a contribution to the normal anatomy of the female pelvic floor.

The ninth paper, by Dr. Alexander James, on some new points in connection with muscle contraction, details experiments on the so-called tendon reflexes. It was found that the time between the tapping of the tendon and the contraction of the muscle was shorter than that required for an ordinary reflex movement; that the time is greater the further from the centre the muscle is; and therefore the contraction is not due to direct stimulation of the muscle:—"From these special conclusions the general one which I think may be drawn is, that these muscle and tendon jerks are really reflexes, but reflexes of a nature much more simple than the ordinary ones, in which sensory nerves, nerve centres, and motor nerves are concerned. Looking upon muscle, motor nerve, and

central nerve cell as being composed alike of masses of irritable protoplasm, and remembering that the masses of irritable protoplasm which compose these can conduct in either direction, we can suppose that the stimulus of the tap applied to the muscle directly, or indirectly through its tendon, produces its contraction only after the impulse so generated has traversed through muscle and motor nerve-fibre to nerve cell, and down again to muscle along the same nerve-fibre."

In the next paper Dr. Woodhead and Mr. Irvine continue their researches on the secretion of carbonate of lime by animals. The previous researches were made on fowl, and it was found that the carbonate of lime in the egg-shells was normal, even although lime was given in the food in other forms than as carbonate, the best results got being with phosphate. In the present essay the authors study the formation of the calcium carbonate not only in vertebrates, but in marine animals, as crabs, kept in artificial seawater from which calcium carbonate was excluded. It was found that crabs could not assimilate sulphate of calcium even in the presence of chloride of sodium, but as soon as chloride of calcium is added, although the sulphate be withheld, shell formation may go on.

In the animal body phosphoric acid combined with alkalis and alkaline earths is found in large and constant quantities in the blood and lymph. It acts as a carrier of lime to every point of the body where carbonic acid may be given off. Carbonate of lime is formed and the phosphoric acid re-enters the circulation to continue its work as a carrier.

In most of the secreting layers and in the fluids supplied to them lime is found, as some form of phosphate. Where the fluids bathe the matrix, or where there is no intervention of an epithelial secreting layer, the lime is thrown down very largely as phosphate, as in bone; but where an epithelial secreting layer is found, or where there is much distance or tissue between the fluids and the seat of deposition, carbonate of lime preponderates. Lime-salts, of whatever form, are deposited only in vitally inactive tissues, but are apparently separated from the fluids of the body through the activity of carbonic acid secreting protoplasm of cells. When alkaline phosphates associated with lime and albumen preponderate in the blood, the lime so separated is in the form of phosphate, as in bone formation. When these are partially replaced by an excess of alkaline carbonates, as in marine animals, the lime is secreted as carbonate.

Next follows a long and richly-illustrated paper on tuberculosis of bones and joints, by H. A. Thomson, in which, among other things, the great importance of the bone affection in tubercular disease of joints is pointed out. The paper, which scarcely admits of abstract, is a valuable contribution to the subject with which it deals.

A most interesting paper on necrosis of the bladder is contributed by Dr. F. W. N. Haultain, giving details of two new cases. It is shown that the main factor in the causation of this extraordinary affection is interference with the blood-supply of the viscus by pressure of one kind or other. The whole subject is treated in all its aspects in a masterly way, and a table of all the previously published cases is given.

Dr. Ashdown's essay on certain substances found in the urine, which reduce the oxide of copper upon boiling in the presence of an alkali, is an addition to our knowledge of the physiology and mode of detection of glycuronic acid. He describes the first discovered case of the passage of this substance in large quantity by a person otherwise in good health.

A description of the anatomy and histology of the stomach of the narwhal, illustrated by four plates of photographs, is given by Dr. Woodhead and Mr. Gray.

Dr. Alexander Bruce describes a connection between the inferior olivary body and the auditory nerve which has not hitherto been noticed. The strand begins on the external aspect of the olive:—"It then bends gradually inwards, backwards, and in an upward direction, forming a compact bundle, till it reaches the inner side of the nucleus of the seventh or facial nerve. Then it turns outwards and slightly backwards, crossing the roots of the facial nerve. As it does so the fibres spread out from each other in a fan-shaped manner, and become less easy to trace. They apparently, however, bend somewhat downwards and enter the external (Deiter's) nucleus of the vestibular root of the auditory nerve. This connection of the olive with the auditory nerve may serve to throw some light on the special function assigned to the inferior olivary body in maintaining the equilibrium of the body."

The last paper is one of a highly suggestive character on enzyme action in lower organisms, by G. E. Cartwright Wood.

The great variety and interest of the papers contained in the volume will be apparent from this short notice. The text is illus-

trated by forty-three plates, many of which are coloured. We congratulate the College on the splendid use which is being made of their laboratory.

The Extra Pharmacopœia, with the Additions introduced into the British Pharmacopœia, 1885. By WILLIAM MARTINDALE, F.C.S. *Medical References and a Therapeutic Index of Diseases and Symptoms.* By W. WYNN WESTCOTT, M.B. Lond. Sixth Edition. London: H. K. Lewis. 1890. Crown 8vo. Pp. 485.

It is always a grateful task to chronicle the success of a literary undertaking. Accordingly, we feel much pleasure in congratulating Messrs. Martindale and Wynn Westcott on the publication of the sixth edition, and thirty-sixth thousand, of their "*Extra Pharmacopœia*."

As the authors point out in their preface, the current of Pharmacology seems to be following in the wake of modern Chemistry through the intricacies of the endless series of derivatives obtained from coal tar and various alcohols. As a consequence, and with the aid of the advances made by chemical science in producing substitution compounds, an attempt is being made to found a system of rational, in contra-distinction to empirical, therapeutics. The use of such drugs as quinine and morphin has of late been rather at a discount in English practice. Such chemical compounds as antipyrin, antifebrin, phenacetin, exalgin, and salicylate of sodium, have in a great measure taken the place of quinine, while sulphonal, tetronal, chloral, paraldehyde, chloralamide, urethan, and such like compounds are running morphin very closely in popular and professional favour.

Hence it is that the authors give many abstracts of the therapeutical uses and pharmacy of these chemical compounds and of many of their allied products.

In the present edition also the therapeutical references and index have been much extended, and several formulæ for pills (including one for phosphorus in combination with nux vomica, at page 296), as well as hypodermic injections of new mercurial and other compounds in "*vaseline oil*," have been added. An account of vaseline oil, or "*liquid vaseline*," will be found at page 288 of this edition. The unofficial formulæ of the British Pharmaceutical Conference for 1889 have been inserted, and notes on the anæsthetic use of chloroform, on chloride of methyl, and on the mydriatic

alkaloids have been collated from the latest sources of information, such as the Report of the Hyderabad Commission.

It is evident from this statement as to the special features in the new edition that the authors have striven, and not in vain, to keep abreast of the astonishing progress in therapeutical science which recent years have witnessed.

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. LEONARD CORNING, M.D., Consultant in Nervous Diseases to St. Francis Hospital, New York. *With an Appendix on Eye-Strain as a Cause of Headache.* By DAVID WEBSTER, M.D. London: H. K. Lewis. 1890. Pp. 259.

It does not appear to us that Dr. Corning has written in this work anything important or that calls for comment on either the ætiology, the pathology, or the symptoms of the various kinds of headaches. He, however, treats many of his cases in a manner that is, to us at any rate, unusual. "Congestive or hyperæmic headache" is, he says, best treated in the following manner:—He compresses both common carotid arteries against the vertebral column by means of a peculiarly shaped electrode, and at the same time passes a current of electricity through it, by which the pneumogastric and sympathetic nerves are stimulated. He states that pressure should not be carried so far as to cause the entire closure of the lumina of both arteries—a recommendation with which we quite agree.

In facial neuralgia he introduces cocaïn into the tissues of the skin. He makes, with a special instrument provided with a number of fine needles, many pricks in the skin, to increase its porosity; then he applies over them a sponge electrode saturated with a 5 per cent. solution of cocaïn, and the electrode is connected with the positive pole of a battery. The negative electrode is applied to some neighbouring part. The neuralgic pain generally ceases in eight or ten minutes. In some cases, in order to prevent the cocaïn being washed away by the blood-stream, pressure by means of a special pad is applied as soon as the anæsthetic has been introduced. The pressure checks the circulation, and thus areas may be kept in a state of complete anæsthesia for an hour and a half.

In some cases of "spinal irritation" Dr. Corning injects, either into the spinal canal or as near to it as possible, one hundred

minims of a one and a half per cent. solution of cocaïn hydrochlorate to which gr. $\frac{1}{8}$ of pyrogallic acid is added. For these injections a special technique is necessary, for which we must refer our readers to the original.

The chapters on Sleep and on Dreams do not call for any special comment.

The author quoted most frequently and with most approval is "J. Leonard Corning, M.D."

Dr. Webster's Appendix merely emphasises the fact, now generally recognised, that many headaches are due to eye-strain.

Abdominal Surgery. By J. GREIG SMITH, M.A., F.R.S.E.; Surgeon to the Bristol Infirmary. Third Edition. London: J. & A. Churchill. 1889. Pp. 799.

THE fact that this book has reached a third edition in little more than two years is the best proof of the popularity to which it has attained. Mr. Greig Smith was the first to give us a volume specially devoted to a region which of late years has occupied so much of the attention of surgeons. So good an operator, with a very varied experience, was sure to have much to tell for the guidance of others; but he has, moreover, a literary facility that is uncommon, and a clearness of expression that might be copied with advantage. This third edition has extended much beyond the limits of the first. This is due to the addition of the latest experiences to what had already appeared in the original issue, but we have further two new sections devoted to suprapubic cystotomy and to operations for abdominal injuries and inflammations. Perhaps the author will be induced to add in his next edition some sections on hernia. There does not appear to be any reason for the exclusion of this subject, except the increase of size in the volume; but hernia is one of the commonest of abdominal troubles, and many surgeons would desire to have a concise history of operations, especially for radical cure.

The method of the book is very good. First, in a section is given a short history of the operation under consideration, and not infrequently we find—as in the case of the "invention" of instruments—that our now-a-day ideas have been anticipated, although not put into practice; then come "the indications" for operation; next "mortality and appreciation;" then the operation and its modifications; and finally, the after-treatment. Mr. Greig Smith

never leaves us in doubt as to what he wishes to convey. The operation is described with all necessary clearness, and his own position as a brilliant surgeon enables him to criticise with the fullest weight of experience and authority.

The illustrations are very numerous and good, and the letterpress and printing are excellent. The book stands easily first of all others on the group of subjects with which the author deals.

SOME PERIODICALS.

1. *Medical Reprints—American, Foreign, and Colonial.* London: John Morgan Richards. 1890. Pp. 12.
2. *The Medical Record: a Journal of the Allied Sciences of Medicine, Surgery, Obstetrics, and Sanitation.* Edited by JAMES R. WALLACE. Calcutta. 1890. Pp. 16.
3. *The North-Western Lancet: a Semi-Monthly Medical Journal.* St. Paul, Minn. Pp. 16.
4. *The John Hopkins Hospital Bulletin.* Baltimore. 1890. Pp. 16.
5. *La Médecine Moderne; Journal de Thérapeutique, de Médecine, de Chirurgie, d'Accouchements et de Pharmacologie.* Paris. 1889. Pp. 20.
6. *Journal de Médecine de Bordeaux; publiant les Comptes-rendus et Travaux de la Société de Médecine et de Chirurgie de Bordeaux, et de la Société d'Anatomie et de Physiologie.* Bordeaux. Pp. 12.

1. WE have received the first number of *Medical Reprints*. This newly-discovered asteroid appears to have no fixed period, the editor promising only to communicate with the profession "from time to time." "Arrangements have been made," Mr. Richards tells us, "for advance sheets of the *Medical World* (Philadelphia, U.S.), and other important medical journals published abroad, selections from which are furnished to me by qualified medical correspondents, by means of which I am enabled to place before the profession in this country much authentic and important news, carefully edited, and selected by professional hands." The idea is a good one. A leading New York surgeon complained to the writer once of the impenetrability of the insular mind to American discoveries and inventions. The fault is rather ignorance and inattention than wilful neglect; and a journal of this kind, selecting the more

interesting and important items from the enormous mass of trans-Atlantic periodical literature, cannot fail to be useful to us readers. Whether the idea is likely to be efficiently carried out by an editor who does not belong to the profession, and who very palpably uses the *Reprints* (gratuitously distributed) as an advertisement of his business as a wholesale druggist—and of one preparation of his in particular—we cannot say. The number before us promises fairly, and contains an interesting chapter in medical history, with portraits of Henry VIII. (Holbein), Linacre, Caius, Cardinal Wolsey, and Sir W. Gull.

2. The *Calcutta Medical Record* is a new monthly, promising to grow up into a fortnightly if adequately nourished in its infancy and childhood. To the obvious objection that its existence is superfluous, on ground overshadowed by the *Indian Medical Gazette*, it replies that the latter, “whether rightly or wrongly, is viewed by the large and ever-increasing body of independent physicians as an officially subsidised organ, almost exclusively devoted to the sectarian instincts of the official classes.” Surely British India is capable of maintaining more than one medical periodical, and the increasing class of non-official practitioners is able to support a journal of its own. If Mr. Wallace (a licentiate of the Edinburgh Colleges and of the London Society of Apothecaries) can continue as he has begun, his enterprise will be rewarded with success.

3. Minnesota sends us the *North-Western Lancet*, a journal in its ninth year. In the number before us we note that Dr. Ernst, of Boston, has been investigating the transmissibility of tuberculosis by milk. He examined 114 samples of milk, yielded by 36 cows affected by tuberculosis of some organ other than the udder. Of these samples, seventeen, from ten cows, contained the specific bacilli. Cultures of these bacilli inoculated in sound animals set up tuberculosis in 50 per cent. of the experiments. Dr. Ernst concludes that the danger of using the milk of tuberculosis cows is not confined to cases in which the udder is affected.

4. In December, the *John Hopkins Hospital Bulletin* made its first appearance in Baltimore. The professional instruction, which appears to be of the most elaborate and practical character, is restricted to graduates in medicine and advanced students in biology. The hospital, the plans for which were adopted after the most careful consideration during the three years following the muni-

fiænt founder's death, was begun in June, 1877, and completed in May, 1889. A full description of it is given in the opening number of the *Bulletin*, and the other papers in the two numbers before us promise well.

5. *La Médecine Moderne* is a new Paris weekly, the first number having appeared in December. The contents are abundant and varied. Whether there was a vacant place for our new contemporary to fill, it is for time and our Parisian confrères to decide.

6. The Bordeaux *Journal de Médecine* is in its nineteenth year. One of the numbers before us contains an appreciative article on the labours of Hyderabad Chloroform Commission, whose conclusion—that it is more important to watch the respiration than the pulse during chloroform anæsthesia—is in accordance with the view which had prevailed in France. In another, a short note informs us that advertisements of machines for the manufacture of artificial coffee beans are openly appearing in certain journals. Cologne is the principal seat of this interesting industry. The raw material is said to be linseed meal, roasted, and agglutinated with dextrin, or some other similar adhesive.

The Natural History of Specific Diseases. By EDWARD WILLOUGHBY, M.D. Lond. London: H. K. Lewis, 136 Gower-street, W.C. 1890. Pp. 64.

THIS little book treats of many of the most important and interesting questions connected with bacterial diseases—such as their evolution, immunity, protective inoculations, disinfection, &c. Although there is in it very little that is new, nevertheless it contains a good deal of information on these subjects. Its chief fault is that it is written in a rather involved style, which makes it somewhat difficult to read.

Dr. Willoughby believes that the organisms of diphtheria, and, perhaps, of enteric and yellow fevers, exist and are perpetuated externally and entirely independent of the presence of man and other animals, but that on gaining access to the living body they set up the phenomena of the disease—i.e., that outbreaks of these diseases may originate *de novo*, and without any infection from a previous case. With regard to acquired immunity, he considers that “the ptomaines produced by the specific bacteria so modify the chemical constitution, molecular construction, or some of the

other properties of the entire protoplasm of the body, as to render it incapable of furnishing a fit pabulum for the microbes of the particular disease; that this altered protoplasm reproduces itself for a longer or shorter period, always however tending, sooner or later, to revert to its pristine character." He suggests, as an explanation for the fact that the period of incubation of the specific fevers is sometimes unusually long, that the infecting agent in these cases may be spores and not active bacteria.

On page 21 we read, "Connective tissue cells . . . take on the character of *carcinoma*." This, of course, should be *sarcoma*.

Although we could not call Dr. Willoughby's little book a first-class work on the subject it treats of, it contains a good deal that is interesting, and will repay perusal.

Asthma, considered specially in relation to Nasal Disease. By E. SCHMIEGELOW, M.D. London: H. K. LEWIS. 1890. Pp. 90.

THE following are the conclusions of this essay, which is an English edition of a book published last year in the Danish language at Copenhagen:—

"1. That asthma must be considered as a bulbar neurosis.

"2. That the bulbar neurosis, which consists in an excessive reflex irritability of the respiratory centre, may be, though comparatively seldom, accompanied by a state of general nervousness, and in this case, as a rule, has the same etiological origin as hysteria or neurasthenia (whether it be inherited or acquired).

"3. That the bulbar neurosis may develop after weakening factors, such as child-birth, bleeding, continued fever, &c.

"4. That the bulbar neurosis sometimes appears in otherwise apparently healthy individuals without any trace of other nervous phenomena, and in these cases it is presumedly the result of frequent and strong irritations, which are conducted to the respiratory centre from the nasal fibres of trigeminus (to which the irritation of other nerves, specially of the laryngeal and pulmonal fibres of the pneumogastric nerve, may be added).

"5. That an asthmatic attack in many cases may originate from the mucous membrane of the nose if only the necessary condition and the increased bulbar reflex-irritability be present, and that, *ceteris paribus*, irritations conducted to the medulla oblongata from any sensitive nerve whatever, are capable of causing an asthmatic attack.

"6. That it is possible in some cases, by suppression of the peripheral

irritations—*e.g.*, in one case by a careful treatment of a chronic nasal catarrh—to stop definitely the asthmatic attacks, but that this in many cases first succeeds after also having applied a generally strengthening treatment which aims at the central nervous complaint.

“7. That one ought, in every case of asthma, to examine the nasal cavity, and eventually, if the form of the disease and the objective state give a right to suppose a decided connection between the asthmatic attack and the nasal complaint, to put the patient under competent treatment.

“8. That nasal diseases may accidentally accompany cases of asthma without having any etiological connection with the asthmatic attacks.”

The John Hopkins Hospital Reports. Vol. II., Parts 1 and 2. Baltimore. 1890. Pp. 128.

IN these fasciculi ten papers are contained. The first, by Dr. W. Osler, is on fever of hepatic origin, particularly the intermittent pyrexia associated with gall-stones. From the consideration of a large number of cases the following conclusions are drawn:—

“1. In cancer and in cirrhosis a certain number of cases present fever of moderate grade, but scarcely distinctive enough to be of value in diagnosis.

“2. Chronic obstruction of the common bile-duct is often accompanied by an intermittent pyrexia, associated with a symptom-group of the greatest diagnostic importance.

“3. This pyrexia is not usually the result of suppuration, as has been supposed, but occurs with a catarrhal cholangitis.

“4. That it arises from the absorption of a ferment, produced in the ducts, is rendered highly probable by the discovery of micro-organisms both in the catarrhal and in the suppurative cholangitis.

“5. While recovery may follow, even after months, or even years, a fatal event is only too common.

“6. A recognition of the importance of this intermittent pyrexia and its associated symptom-group, as diagnostic of obstruction of the common duct by gall-stones, should, in the present condition of hepatic surgery, lead to more frequent operative interference in these cases.”

Dr. J. N. Mackenzie writes on malformations of the uvula, particularly double uvula. He describes five varieties, and explains their origin by embryological considerations. The paper is illustrated by some rough but demonstrative figures.

Dr. Lafleur reports the results of the medical use of pyrocin or

acetyl-phenyl-hydrazin, and some facts arrived at by experiments on animals with this new drug. He concludes that—"While as prompt and as efficient a reducer of fever as the other members of the anilin group, pyrodin possesses in a more marked degree their poisonous properties, and should not be given in doses exceeding two grains (0.13 gram) or continued for longer periods than two or three days."

Dr. Osler records five cases of post-febrile insanity—one following pneumonia, the others typhoid fever. He finds that the prognosis is good, so that the patient is, where possible, best treated at home. Seclusion, incessant watchfulness, absolute rest in bed, with massage and careful feeding, constitute the essentials in treatment.

Dr. Toulmin gives the details of an interesting case of acute tuberculosis in an infant of four months, in which the disease appears to have been contracted by residence in a house previously inhabited by a phthisical patient.

Dr. Osler describes rare forms of cardiac thrombi, including one example of the excessively rare ball thrombus, in which the thrombus is free in the cardiac cavity (left auricle in this instance) but is too large to be expelled through the openings.

Dr. Osler gives also a note on endocarditis in phthisis. He details a case in which a very localised murmur in the 2nd and 3rd left interspaces accompanied mitral incompetency. In 216 autopsies in phthisis there were 12 cases with fresh endocardial vegetations; mitral valve, 8; aortic valves, 3; aortic and mitral, 1. One case was ulcerative, the others warty without destruction of segments. This proportion of cases is about the same as that found by Dr. Percy Kidd. In the cases examined by Osler, Kidd, and Councilman no bacilli were found in the cardiac vegetations. Other observers have, however, got positive results.

As conclusions to a long and highly interesting paper on tubercular peritonitis, Dr. Osler arrives at the following:—

"1. That tubercular peritonitis is often a latent affection, localised in the peritoneum, which may even run its course without inducing special symptoms.

"2. That, as in other local tubercular processes, there is in this a natural tendency to healing, which takes place more frequently than has hitherto been supposed.

"3. That statistical evidence shows laparotomy to be in many cases a palliative, and in a certain number a curative, measure."

Dr. Thomas contributes the history of a case of Reynaud's disease, which is remarkable from the circumstance that the attacks of local syncope in the hands, often followed by a chill, were associated with loss of consciousness and convulsions, after which dark-coloured urine containing hæmoglobin, tube-casts, and albumen, was passed.

Finally, Dr. Osler has a paper on acute nephritis in typhoid fever. The connection of this with the typhoid poison is still uncertain. It is a severe affection, often of a hæmorrhagic form, and frequently proves fatal.

It will be seen that the papers in these Reports are of great variety and importance. We shall look forward to succeeding volumes with much interest.

RECENT WORKS ON CANCER.

The Morton Lecture on Cancer and Cancerous Diseases. Delivered at the Royal College of Surgeons of England on Monday, 18th November, 1889. By JOHN MARSHALL, F.R.S., &c., &c. London: Smith, Elder & Co. 1890. Pp. 24.

The General Theory of Cancer Formation. Being a Lecture delivered at the Cancer Hospital on March 1st, 1889. By HERBERT SNOW, M.D. London: Churchill. 1889. Pp. 24.

ONE of the main ideas in both these lectures is that the abnormal growth in cancer is due to the loss of nervous control over the life of the multiplying cells, or to an irritation reaching them through the nerves. Both lectures will be found suggestive and interesting, although altogether of a speculative character.

A Text-book of Animal Physiology, with Introductory Chapters on General Biology and a Full Treatment of Reproduction. By WESLEY MILLS. New York: Appleton & Co. 1889. Pp. 700.

IN this volume the author attempts to do for physiology what has already been so successfully done for zoology—that is, to make embryology and the principles of evolution the basis of the subject, and to carry out his teaching on the comparative method. Accordingly the book begins with sections on general biology and reproduction and embryology—subjects which are not only treated of earlier, but also much more fully, than in other physiological text-

books. That this is logical there can be no doubt, but whether it is the method practically best adapted for teaching beginners is open to question, although Professor Mills' great experience and success as a teacher furnish a strong presumption in its favour.

After a general description of the structure of the cell we have chapters on unicellular organisms, vegetable and animal—the yeast plant and protococcus are taken as types of the former, and the proteus animalcule of the latter. Higher organisms, as moulds, the bell animalcule and the fresh-water polyps, are then described, after which the cell is again reconsidered, and an epitomised account of the functions of a mammal is given. A comparison of living and lifeless matter and a classification of the animal kingdom, showing the position occupied in it by man, is followed by suggestive chapters on the law of periodicity or rhythm in nature, on the law of habit, and on the origin of the forms of life. These are succeeded by the chapters on Reproduction, in which the male and female elements are described, and an unusually full account is given of the changes which follow their junction up to the period of birth.

The next section is on the chemical constitution of the animal body. This occupies only fifteen pages, but is supplemented by an appendix on animal chemistry. It appears to us that the weak side of this book is its chemistry, which, in our opinion, does not receive sufficient consideration, when its importance and difficulty are taken into account.

The different physiological functions then follow, beginning with the blood and circulation, in connection with which the general physiology of muscle and nerve finds a place; then digestion, respiration, excretion, metabolism, including animal heat, and the special physiology of the nervous system.

Throughout, the statements are clear, and the author shows a thorough grasp of his subject and much skill and judgment in its exposition. The frequent references to the functions of the lower animals tend greatly to enlarge the views of the different processes, while the necessity of not transferring to man facts discovered in other animals is kept in sight. Each chapter ends with a summary which will be very useful to beginners.

The work is well brought out, printed in large type on good paper, and well bound. It is profusely illustrated with drawings and diagrams. Of the latter, many are original and constructed with much ingenuity; they will be found very useful by teachers.

On the whole, Professor Mills is to be congratulated on having produced a valuable addition to the now large supply of good English text-books of physiology. To the work we wish every success, and can most cordially recommend it to our readers.

Medical and Legal Preventives and Remedies for Drunkenness and Dipsomania. Two Addresses. By W. T. GAIRDNER, M.D.
Glasgow: James Maclehose & Co. Pp. 27.

DR. GAIRDNER, in his first address, gives an interesting summary of the views taken by the law at various times of drunkenness, and of the gradual recognition of a state in which a voluntary act by frequent committal becomes involuntary. He quotes some interesting definitions, such as Coke's *Voluntarius Dæmon*—viz., drunkard, and Hale's *Dementia affectata*—viz., drunkenness.

The author points out the small worth of the Habitual Drunkards' Act, 1879, and the widely-recognised importance of fresh legislation in harmony with the recommendations contained in the Report of the Select Committee on Habitual Drunkards, 1872, more especially to provide for compulsory incarceration and detention.

The second "Address" is a reprint of a paper read before the Social Science Congress, 1869.

Gout and its Relations to Diseases of the Liver and Kidneys. By ROBSON ROOSE, M.D. Sixth Edition. London: H. K. Lewis. 1889. Pp. 179.

THE appearance of a sixth edition four years after the first, and eighteen months after the fifth, and the fact of translation into German and French, render extended notice unnecessary. It is sufficient to say that the present edition is not a mere reprint, but is written up to date, and yet is hardly at all increased in size, being but ten pages longer than the fourth edition. Dr. Robson Roose's book has won favour, and deserves it.

PART III.

SPECIAL REPORTS.

THE BACTERIOLOGY AND PATHOLOGICAL RELATIONS OF INFLUENZA.

By the EDITOR.

WE translate from the *Centralblatt für klinische Medicin*, 1890, No. 12, March 22, the following abstracts of valuable communications which have lately appeared in the medical press of Germany, Austria, and Russia, on the all-absorbing topic of Influenza:—

1. *Anatomical and Bacteriological Investigations on Influenza.*

Ribbert (*Deutsche med. Wochenschrift*, 1890, No. 4, pp. 61–63) says that, in eight autopsies, the lungs were twice found without pneumonic processes; in three of the remaining cases the pneumonia had invaded a whole lower lobe. In contrast to ordinary croupous pneumonia, the cut surface of the hepatised lobe presented an almost smooth appearance; the exudation was soft, very rich in cells, and poor in fibrin (hypinosis). In one case also the lobar consolidation was on section seen to have resulted from lobular pneumonia—the separate lobules were not uniformly altered. In four cases the consolidated patches, radiating from separate foci, coalesced with partly smooth, partly granular surfaces. In all cases alike there was an injection, varying in its intensity, of the mucous membrane of the larger bronchi, of the trachea, and frequently of the larynx as well. The *post-mortem* examination carried out in five cases showed a considerable cellular infiltration of the mucous membrane, with extreme overfilling of the blood-vessels. The spleen was swollen in all cases, always distinctly enlarged, occasionally to several times its usual size, and generally of an abnormally soft consistence. In one case the kidneys showed cloudy swelling; on another occasion, commencing fatty degeneration of the convoluted uriniferous tubes.

In connection with these pathological changes, it is to be remarked that in seven of the patients who had died, the influenza

had supervened upon an already existing tuberculosis (in two cases), emphysema (in two cases), myocarditis with mitral narrowing (in one case), fatty heart with adherent apex (in one case), lipomatous atrophy of the muscles of the trunk and extremities (in one case).

Cultivation experiments with the tracheal mucus, the lung tissue, the spleen, and the kidneys, furnished in five cases the *Streptococcus pyogenes* or else the *Streptococcus erysipelatosus*, the presence of which microbe could be demonstrated in the sputum also of the influenza patients.

This streptococcus was found in the most unusually large numbers of all in a case in which the influenza had caused no distinctive morbid appearances in the lungs—and, in particular, no consolidations. In another case, unaccompanied by morbid appearances in the lungs, the spleen and kidneys invariably yielded pure cultures of the streptococcus. In the tissue of the mucous membrane, infiltrated as it was with cells, streptococci could not be clearly demonstrated.

On the whole, then, it appears that the streptococcus, even if it is not the specific germ of influenza, may play a very active part in the course of that disease.

2. *A Condition of the Blood in Influenza.*

Klebs (*Centralblatt für Bakteriologie*, 1890, No. 5) has, in the first place, examined the blood obtained by a prick in the tip of the finger, and has found in it—in addition to the perfectly unaltered red blood-corpuscles—an enormous mass of small, actively moving, highly refractile corpuscles, which in size, shape, and movement exactly correspond with those which he has come to recognise in pernicious anæmia, in which, at the same time, they are never present in such numbers. In distinction, however, to pernicious anæmia, no microcytes were to be found in the blood of those ill of influenza. In the blood of a patient who died of this disease, besides the monads referred to, the author found intermediate and larger oblong and oval forms, which differed from the monads in question by their very slow movements; and their shape and position could be made out very clearly in stained preparations obtained by means of Ehrlich's solution of methyl-blue. In the forms which had come to rest, a rigid stalk-like process of the same length as the diameter of the corpuscle could be observed. Further, it could be seen as clearly as possible that a large number

of flagellate organisms were present in the interior of the red blood-cells; the latter contained generally 2 or 3 to 5, rarely only one, of these flagellate organisms. The red blood-corpuscles which were filled with flagellate organisms are unmistakably recognisable by their spherical shape, while numerous other blood-discs are dish-shaped or jagged-edged.

From this, then, Klebs suggests that in all the processes which are brought about by hæmatozoa belonging to the class of the protozoa, the forms of continued fever which are so characteristic for the schizomycetes are wanting. Both in malaria and in pernicious anæmia the intermitting character or type of the fever stands out in a striking manner. In influenza, likewise, a recurrence of the febrile conditions takes place, commonly designated as a relapse; yet, in this case too, the question may be one of a phase in the development of the micro-organisms which bring about the relapse.

3. *Bacteriological and Pathologico-Anatomical Investigations on Influenza and its Complications.*

Weichselbaum (*Wiener med. Wochenschrift*, 1890, No. 6) has utilised the rich material afforded him by the influenza epidemic at Vienna in comprehensive bacteriological and pathologico-anatomical studies, the results of which he reports in the work before us. The investigations referred, in the first place, to the sputum and blood of the patients—twenty-one in number. In nearly all the cases the pneumococcus was found in the sputum predominantly among numerous other kinds of bacteria. In one case he was successful in demonstrating the presence of the pneumococcus in the urine also. Examinations of the blood invariably yielded negative results.

Weichselbaum examined the bodies of ten patients who had died of influenza, partly with, partly without, complications. The occurrence of acute inflammations of the accessory cavities of the nose, especially the frontal and maxillary sinuses, were conspicuous by their almost constant presence. In the pus taken from these sinuses the presence of pneumococci could always be demonstrated.

In one case, suppurative pachymeningitis and leptomeningitis were found, together with a cerebral abscess. They had taken their origin from the maxillary and frontal sinuses. In three cases also of inflammation of the middle ear, pneumococci could be cultivated from the exudation.

In seven cases, further croupous pneumonia had occurred, once with the formation of an abscess; in one case, a slight broncho-pneumonia; in another case, purulent pleuritis. Enlargement of the spleen was commonly present, yet never to an extraordinary degree; also cloudy swelling of the liver and kidneys was observed.

In connection with this constant discovery of pneumococci in the sputum as well as in the pathological processes observed in the dead body, Weichselbaum proceeds to discuss the question whether the pneumococcus is the cause of influenza, or whether the latter is produced by a micro-organism as yet quite unknown to us, while the presence of the pneumococcus has the significance only of a secondary infection, which is capable of producing certain complications of influenza. Weichselbaum inclines towards the latter hypothesis, but believes that the pneumococcus constantly plays an essential part, inasmuch as it is capable, on the one hand, of maintaining and increasing catarrhal processes; on the other hand, of evoking many and severe complications, especially croupous pneumonia.

4. *Preliminary Communications on some Bacteria found in Influenza.*

Babes (*Centralblatt für Bakteriologie*, 1890, No. 8) has inoculated rabbits and guinea-pigs with the secretion from the innermost recesses of the nostrils, as well as with the sputum of recent uncomplicated cases of influenza. The animals, for the most part, perished in a few days with pneumonic phenomena. From agar-agar cultivations, dust-like, finely-granular cultures developed from all the organs at the bottom of the track made by the inoculation needle. These spread themselves out on the surface as small, entirely transparent, and colourless colonies; after a few days longer, these can scarcely be recognised any more. On nutrient gelatin, little molecules developed at the bottom, which could be distinguished from other bacteria through their transparency. On potatoes, no growth of the bacteria could be detected. These colonies consist of extremely small constricted bacteria, 0.2 to 0.4 μ (0.002 to 0.004 of a millimetre) in thickness, sometimes forming short chains, sometimes drawn out into fine rods, sometimes round or pear-shaped. At their extremities vesicular swellings are found here and there. These bacteria readily produce lung affections. They flourish *in vacuo*. Babes names them provisionally "Bacterium No. 1."

By direct cultivation of the secretion from the nostrils and frontal sinus of most of the patients, different kinds of bacteria could be obtained. Among these, small, superficial, round, transparent cultures, when cultivated on agar-agar, predominate, which are provided in the middle with a whitish projecting point. These cultures consist of constricted, deeply-stained bacteria of about $0.5\ \mu$ ($\cdot 0005$ of a millimetre) in breadth, somewhat pointed, with one convex and one straight side; often provided in the middle with an unstained transverse stripe; forming parallel groups of two individuals with the straight sides next each other; capable of being deeply stained by anilin colours as well as by Gram's method; motionless. In the case of mice and guinea-pigs, these are pathogenic, frequently causing in the former fatal pneumonia with localisation of the bacilli in the vessels of the alveolar septa, in the latter a kind of septicæmia; while in rabbits sometimes a considerable local reaction arises. This bacillus, Babes designates as "Bacterium No. 2."

Even before the appearance of influenza in Bucharest, malignant attacks of bronchitis and pneumonia prevailed in that city, many of which went on to a *post-mortem* examination. Bacteriological investigations in these cases, revealed in the bronchial tubes, sometimes also in the internal organs, in addition to *Staphylococcus aureus*, *Streptococcus pyogenes*, &c., the presence of peculiar bacteria, which appeared to be fastened together by radiating processes, and so reminded one of a myxomatous tissue. These bacteria also formed considerably raised, gelatinous, almost entirely transparent, colonies. These in places cause a drying up of the oblique surface of the stiffened agar solution, in other places the accumulation of an abundant gelatinous mass at the bottom of the test-tube. These bacteria are pathogenic in mice and guinea-pigs. In respect to size and shape these micro-organisms differ one from the other.

During the epidemic of influenza these forms were very abundant, and were demonstrated in six cases out of nine which were examined. In addition to them, peculiar-shaped streptococci were found in many cases.

5. *Influenzal Pneumonia.*

Finkler (*Deutsche med. Wochenschrift*, 1890, No. 5) has observed 45 cases of influenzal pneumonia, of which only two came under the description of typical lobar pneumonia, while the other 43

were regarded as cases of the disease, which Finkler has now often described as "*Streptococcus Pneumonia*." The phenomena of pneumonia do not stand out very clearly in these cases. The breathing is generally much quickened, often combined with cyanosis; marked dyspnœa (*Lufthunger*) is commonly present. The cough is very trifling and dry; the expectoration is usually scanty, rusty-brown pneumonic sputa being quite inconstant in appearing. The phenomena on physical examination are very diverse, dulness and bronchial breathing are often very slightly marked. The pulse is generally extremely frequent, small and weak.

Seven of Finkler's patients died, *post-mortem* examinations being made in three instances. The essential feature in the pathologico-anatomical appearances consisted in this, that the inflammation developed from foci, that these foci, spreading out in all directions and ramifying through the lobes of the lung, are composed of small lobular pneumonias which, although scattered broadcast, yet include between them small air-filled portions of lung tissue. The cut surface of the pneumonic foci is generally smooth, sometimes distinctly granular. The infiltrated portions of lung tissue are not hepatised, but splenified. The pathological condition is that of a preponderating cellular inflammation with participation of the interstitial tissue. The cellular nature of the inflammation, together with the pronounced tendency it exhibits to develop by spreading indefinitely, justifies us in describing this disease as an erysipelas of the lung. The resemblance of this form of pneumonia to erysipelas consists, not alone in the anatomical character of the inflammatory process, but also in the fact that both diseases depend on the presence of streptococci. Finkler, for example, found in all the pneumonic lungs the streptococcus, of which he had already obtained pure cultures in the cases of streptococcus pneumonia previously described by him, and which he had conceived to be the exciting cause of the same. Only in one lung did Finkler find, in addition, a staphylococcus and a diplococcus, which, however, was essentially different from Fraenkel's *Diplococcus pneumoniae*. Finkler looks upon this streptococcus pneumonia as a localisation of the exciting cause of influenza in the lungs. Therapeutically, Finkler has seen no result from the bath-treatment; on the contrary, he commends the ice-treatment and quinine, from which he has seen advantage from a prophylactic point of view also.

6. *Bacteriological Discoveries in Influenza.*

Levy (*Berliner klin. Wochenschrift*, 1890, No. 7) reports on the bacteriological investigations conducted at the Strassburg *clinique*. These concerned the sputum in the first place; in it, besides staphylococci and streptococci, Fraenkel's *Diplococcus pneumoniae* was found in great numbers. Next, Levy examined the secretion in seven cases of otitis—a disease which occurred as a complication with singular frequency at Strassburg, in all instances poured upon slides of agar-agar and gelatin, and inoculated into white mice. In the six first cases he obtained Fraenkel's *Diplococcus pneumoniae* in a pure culture, in the seventh case the *Staphylococcus pyogenes albus* was, in addition, present. Further, among nine pleural exudations of different kinds, Fraenkel's *Diplococcus pneumoniae* was found eight times, once together with the *Staphylococcus pyogenes albus*, and once the latter was found alone. In the broncho-pneumonia of influenza, Levy was able only once to cultivate Fraenkel's diplococcus from the lung; in one case of lobular pneumonia, in which there was an autopsy, in addition to the diplococcus pneumoniae among others, the *Staphylococcus pyogenes albus* appeared in the infiltration (gray hepatisation). Levy believes, not that any one of the micro-organisms which were found should be regarded as the primary exciting cause of the disease, but that the question is much more one of a secondary infection, for which the influenza merely laid the foundation. Levy finally lays stress on the frequency with which fibrinous pneumonia occurs simultaneously with influenza.

7. *Microscopical Conditions of the Blood in Influenza Patients.*

Kollmann's investigations on this subject (*Berliner klin. Wochenschrift*, 1890, No. 7) yielded the following results:—In fresh, unstained preparations, actively moving forms are present in greater or less numbers; they have an oval or round shape, or the shape of short rods, more rarely that of longer rods. The latter are occasionally swollen at both ends, so as to resemble dumb-bells (*hantelartig*). In addition, forms joined in pairs to each other, so as to resemble diplococci, are frequently present. Some are, however, so small, that it is quite impossible further to define their shape. As far as one can judge from the mere microscopical observations, these forms are none other than those which would be met with also in perfect health, if an examination of the blood was carried out

under the same conditions. Above all, the round and oval forms are sometimes to be seen here in considerable numbers.

The white blood-corpuscles were increased in the cases examined by Kollmann; once to even more than thrice the normal number. This augmentation could be observed as early as the first day of the fever, but in the case of a patient with slow convalescence persisted for several weeks.

8. *On the Influence of La Grippe on the Course of Phthisis, and the type of this disease when complicated with La Grippe.*

Wiltshur (*Petersburger med. Wochenschrift*, 1890, No. 5), in the first place, establishes by statistics that the number of consumptives who, during the epidemic of influenza or "la grippe," sought admission to the department in the Obuchow Hospital attended by him, as well as the number of fatal cases, increased absolutely and relatively, whilst the average duration of the stay in hospital diminished. By this the old opinion is confirmed that influenza is very dangerous to consumptives.

The type of phthisis when complicated with influenza was sharply distinguished from the usual type. The patients are, for the most part, still well nourished. Cyanosis of the face and extremities generally comes on; further, asthma, extreme weakness, high temperature ($40\cdot5^{\circ}$ – 41° C. = $104\cdot9^{\circ}$ – $105\cdot8^{\circ}$ F.); in the lungs, loud sibilant rhonchi and râles. Frequent pulmonary hæmorrhages and a rapid course of the phthisis were the most noteworthy features. The progressive extension of the disease could often be observed from day to day.

Many patients also passed into a state of extreme prostration; many perished quite unexpectedly. The suddenly fatal cases Wiltshur is inclined to explain by implication of the cardiac ganglia.

Lastly, the occurrence of extremely rapid phthisis (galloping consumption) in the course of influenza, in people who had never before shown the slightest sign of lung delicacy, seems to be worthy of note.

Through the kindness of Dr. Henry T. Bewley, we are able to add to the foregoing, abstracts of two recent contributions to the subject of influenza—one English, the other American:—

9. *The Influenza Epidemic in Glasgow.*^a

The epidemic of influenza in January, 1890, in Glasgow was mild when compared with the characters of the outbreaks elsewhere. As Professor Gairdner says, Glasgow was on the outskirts of the infected area. The most important facts mentioned are:—
(1) Although the month of January was, as far as temperature is concerned, unusually mild, the mortality from acute respiratory diseases was as great as in the unusually severe winter season, 1886–87, and differed entirely, in the direction of excess, from other mild winters.

(2) He suggests that the outbreak may have had something to do with the unusually still and stagnant condition of the atmosphere.

(3) The attacks of influenza in many cases differed from ordinary colds in that they came on more suddenly, subsided more rapidly, and were often quite unattended with catarrh.

(4) For a month previous to the epidemic in January, a very severe and widespread epidemic of influenza, or “pink-eye,” in horses had been observed. It did not appear, however, that the men who came most in contact with these horses suffered in any special way from the disease.

10. *Bacteriological Studies on the Influenza and its Complicating Pneumonia.*^b

Dr. Prudden examined the sputum of seven cases of uncomplicated influenza, and of five cases in which it was complicated with pneumonia. In all these cases the only pathogenic bacteria discovered were the *Diplococcus Pneumoniæ*, the *Staphylococcus pyogenes aureus*, and the *Streptococcus pyogenes*—none of which are special to influenza. Dr. Prudden suggests that the micro-organism of influenza may not perhaps belong to the class of Bacteria at all, but may belong to some other class of organisms as different from bacteria as the *Plasmodium malarie* is.

^a Influenza : by W. T. Gairdner, M.D., LL.D., Professor of Medicine in the University of Glasgow. Reprinted from the Glasgow Medical Journal for March, 1890. Pp. 27.

^b By T. Mitchell Prudden, M.D., Director of the Laboratory of the Alumni Association of the College of Physicians and Surgeons, New York. Reprinted from the Medical Record, February 15, 1890.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF OBSTETRICS.

President—S. R. MASON, M.B., F.R.C.S.I.

Sectional Secretary—ANDREW J. HORNE, F.K.Q.C.P.

Friday, January 31, 1890.

The PRESIDENT in the Chair.

Exhibitions.

DR. MACAN exhibited a uterus from a case of vaginal extirpation for carcinoma of the uterus. On examination, he found the cervix taken up and dilated, and the left side of it was quite thinned round a tumour. After he went to Sir Patrick Dun's Hospital he asked her to come there, and found that she had been bleeding very frequently, although the cervix was quite closed. The tumour had disappeared, and she was anæmic. The uterus was fixed. On the 28th of December he removed the uterus by the ordinary process of extirpation per vaginam. The mode of operation involved a separation of the bladder in front from the cervix, by which nothing was left but the broad ligament to cross the vessels on each side. These could be tied with a strong curved aneurysm needle. By pressing the bladder upwards, and drawing the uterus down, the needle was made to go in between the bladder and the portion of the broad ligament required to be tied. By this method the danger was overcome of tying the ureter. The woman's temperature and pulse were normal on the afternoon of the operation; but, to his horror, next morning she showed symptoms of sepsis, and afterwards peritonitis came on, and she died about a week after the operation. He now believed that the cause of the sepsis was his having made a per rectum examination

immediately before he operated. He disinfected his hands; but he was, nevertheless, quite convinced, from having read Leopold's cases, that the per rectum examination led to the peritonitis.

DR. W. J. SMYLY exhibited an ovarian tumour which he removed, three weeks previously, from a woman in the Rotunda Hospital.

DR. MACAN exhibited a dermoid cyst which he removed from a woman five and a half months pregnant; and he told the woman that she had an ovarian tumour, and was pregnant as well. She had not previously menstruated for six weeks. It lasted for only two or three hours, and was very profuse. On making a vaginal examination, he found that the tumour was in the pelvis. From all the other circumstances of the case he came to the conclusion that it was a dermoid cyst. On last Wednesday morning, under ether, an incision was made in the mesial line. He recognised the tumour on the left iliac region, and aspirated; after which he was able to raise it out of the abdomen. It was now not so large as it had been, and, as would be seen, consisted of stuff like tow. After the operation the woman's temperature and pulse were normal; the next day her pulse was 60. The woman, he believed, was practically convalescent now.

DR. BYRNE asked would it not have been better to have deferred the operation until after the pregnancy was over.

DR. MACAN, in reply, said that whenever he encountered complications his practice was to refer to the writings of those who had seen the complications, and shape his practice according to them. And what was laid down was, that in cases of this description it was best to operate as soon as possible after their discovery. The mortality in cases of pregnant women operated on for this tumour was less than in the case of women in a non-pregnant condition who underwent operations for it. Also the pressure on a dermoid cyst was known to be likely to cause inflammation.

A Case of successful Cæsarean Section.

DR. MACAN brought forward a case of successful Cæsarean section, which was, as far as he could learn, the only successful case ever performed in Ireland.

The patient was sent up to the Rotunda Hospital in July, 1889, by Mr. M. Kearney, of Dundalk. She was a dwarf, 3 feet 7½ inches in height. The measurement of the pelvis being:—Sp. Il. = 23 cm. Cr. Il. = 23.3 cm. D. C. = 6.25 cm. C. V. estimated at 4.5 cm.

The operation was performed on August 5th, 1889, at 10.30 a.m., the cervix being quite taken up, and the os admitting one finger. The placenta was adherent to the anterior uterine wall, and was divided by the uterine incision; the hæmorrhage was controlled by an elastic ligature round the cervix. The child was slightly asphyxiated when

extracted, but soon cried out lustily. The uterine walls were brought together by seventeen interrupted silk sutures, passed through the whole thickness of the uterine wall, and no separate ligature was used to bring the peritoneal edges of the wound together. The method of suture was in every respect similar to that used for closing the wound in the abdominal wall, but the distance between the sutures was less than half a cm. There was considerable *post-partum* hæmorrhage, but the patient made an uninterrupted recovery. More than five weeks after the operation the temperature rose to 102°, which was much higher than it had been since the operation, which proved to be due to a return of menstruation. Since the patient returned home two sutures have been expelled *per vaginam*.

DR. SMYLY said it differed from other capital operations in this respect, that it was not so much an operation of the specialist as of the general practitioner. Therefore, if the lives of mothers and children were to be saved, the general practitioner should be as prepared to do Cæsarean section as to put on a forceps. Statistics at present showed much more favourable results for the rehabilitated Cæsarean section, when done by properly qualified operators, than for Porro's operation. Taken as a whole, the mortality in the operation was still 30 or 40 per cent. Porro's operation was much simpler, and, he thought, was quite within the powers of an ordinary operator. One reason, however, why the statistics of the two operations, when compared, were likely to lead to erroneous results was, that all the bad cases had to be done by Porro's operation, whilst Cæsarean section was only adapted to the easier and better cases. He thought Lawson Tait's plan in Porro's operation, of having an assistant to manage the elastic ligature, was an improved practice which might be employed with advantage in Cæsarean section.

DR. DILL mentioned a case where a midwife performed the operation; also his predecessor had an unsuccessful case.

DR. FREDERICK KIDD, DR. LANE, DR. BYRNE, and MR. DOYLE spoke.

MR. MOLONY said he believed the operation was performed by Dr. George O'Farrell in Boyle. The patient lived thirty-six hours.

DR. MACAN, replying, said antisepsis was harder to secure in the Cæsarean than in Porro's operation. For the general practitioner, Porro's, he thought, was the easier of the two. All the instruments required for it were the elastic ligature, two pins and a knife, and a needle and thread. The conditions under which it became more safe for a woman to be delivered by Cæsarean section than by perforation raised an important question. On the Continent they were going a little too far, for a great many of them had done away with the idea of perforation. But, in the middle of labour, to turn over to the Cæsarean section must always be dangerous.

The Section then adjourned.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1889-90.

Notes of a Case of Hysterectomy. By J. ST. CLAIR BOYD, M.D., M. Ch.; Surgeon to Hospital for Sick Children, Queen-street; and Gynæcologist to the Ulster Hospital, Fisherwick-place, Belfast.

S. M., aged thirty-eight, spinster. Previous history:—Patient's attention was first attracted to her condition about four and a half years ago, when she suffered from a severe pain in the left iliac region, and about the same time she began to swell. It was not until fifteen months ago that she sought medical advice, and was informed that she suffered from a tumour, which could only be removed by operation.

She came under my care at the Ulster Hospital for Women and Children, and, after consultation with some of my colleagues, I operated on the case in that institution, July 18th, 1889, at 11 a.m. Professor Sinclair assisted me. Dr. Calwell gave the anæsthetic. Professor Dill and Dr. Strafford Smith were present. Having exposed the tumour by an incision three inches long, the centre of which was at a point midway between the pubes and umbilicus, it was not until I had plunged the trochar into the tumour that I discovered it to be a soft œdematous myoma of the uterus, and that hysterectomy would be required for its removal. The incision was then prolonged upwards to a point level with the middle of the umbilicus, and downwards to within one inch and a half of the pubes. The tumour was withdrawn by the aid of a cork-screw, the broad ligaments tied with silk, and the whole secured at its lower part by Tait's temporary or rope clamp; two pins were passed through the lower part to prevent the pedicle slipping back into the abdomen, and below the pins a Koeberlé's serre-nœud clamp was applied and screwed tight. The tumour was then cut off above the point where it had been transfixed, the temporary clamp removed by cutting the rope, the abdominal incision closed with silk sutures, and the stump dressed with perchloride of iron and glycerine.

The operation lasted fifty-five minutes, ten of which were occupied in adjusting the wire of the serre-nœud, leaving the actual time of operating forty-five minutes. I submit the temperature chart, which shows that only on one occasion did the temperature reach 100°, being on the evening of the third day 100·4°.

For the first forty-eight hours after operation the patient was allowed

nothing by the mouth except teaspoonfuls of hot water to allay her thirst. A $\frac{1}{2}$ gr. morphin suppository was given at 7 15 p.m. on the day of operation; during the first night patient complained of pain in the lower part of her abdomen, and was troubled with flatus, passing a good deal.

July 19th.—Patient had a good day, sleeping frequently; had enemata of hot water and beef-tea, 3 oz. of each, at 10 a.m. and 4 p.m. A morphin suppository at 8 p.m. During this night patient felt sickish in the earlier part; this, however, passed off, and she slept well; at 4 a.m. she awoke with a gnawing hunger. 3rd day.—The wound dressed with iodoform; patient was allowed gruel and whey; a double seidlitz powder was given at 2 30 p.m.; the flatus which had troubled the patient was markedly improved. On this night the patient was restless till 1 a.m., when she had a suppository, and slept fairly afterwards; very little flatus, no pain or sickness. 4th day.—Patient had tea and biscuit morning and evening, in addition to gruel and whey. 5th day.—Bowels moved with a glycerin enema; patient passed her water unaided to-day; was allowed chicken jelly, in addition to yesterday's diet; passed a rather sleepless night, sleeping only three hours. 6th and 7th days.—Two stitches removed on each of these days. 9th day.—Diet consisted of milk, rice, chicken soup, champagne, soda water, &c. 11th day.—There was a slight watery discharge from the vagina, which continued for three days. The pedicle came away on the 3rd of August. She sat up on the 4th August, and was discharged on the 22nd, wearing an abdominal belt.

I may say, in conclusion, that this operation was conducted on the same principles as I had been accustomed to see employed by Mr. Lawson Tait, whom I know has performed it thirty-three times consecutively with a successful result. Moreover, the operation which I have described is exactly similar to Porro's operation, as far as it concerns the uterus. I may say that this operation would seem to me preferable to Cæsarean section, because the uterine wound is in sight, and under control; it is cut off from the abdominal cavity, and the removal of the uterine mass, which would otherwise tax the system with its absorption, must place the patient in a better position for recovery.

LITTRE'S HERNIA.

Two cases of this unusual form of hernia are reported from Philadelphia, by Dr. C. B. Penrose. Both cases occurred in women who were respectively forty-eight years and sixty-four years of age. Abdominal section in the mesial line was performed on both patients. The first case succumbed, the attachments of the gut could not be broken down; but the second case made an uninterrupted recovery.—*Medical News*, November 9th, 1889.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.;
F. R. Met. Soc.; Diplomat in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, March 22, 1890.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	March 1.	March 8.	March 15.	March 22.		March 1.	March 8.	March 15.	March 22.
Armagh -	5.2	10.3	25.8	31.0	Limerick -	28.3	28.3	39.1	39.1
Belfast -	45.6	44.5	32.3	40.2	Lisburn -	38.7	33.8	9.7	14.5
Cork -	32.4	29.2	23.4	29.9	Londonderry	39.2	38.9	32.1	32.1
Drogheda	25.4	42.3	46.5	8.5	Lurgan -	35.9	51.3	25.7	41.0
Dublin -	29.5	26.7	27.8	30.3	Newry -	24.6	31.6	24.6	17.6
Dundalk -	61.1	30.6	48.0	43.6	Sligo -	4.8	4.8	33.7	14.4
Galway -	50.4	58.8	30.3	16.8	Waterford -	55.6	32.4	55.6	16.2
Kilkenny	4.2	46.5	29.6	29.6	Wexford -	34.2	4.3	47.0	12.8

In the week ending Saturday, March 1, 1890, the mortality in twenty-eight large English towns, including London (in which the rate was 21.3), was equal to an average annual death-rate of 25.6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26.9 per 1,000. In Glasgow the rate was 28.1, and in Edinburgh it was 26.9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 35.0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4.6 per 1,000, the rates varying from 0.0 in nine of the districts to 10.6 in Belfast. The 203 deaths from all causes registered in that district comprise 24 from measles (being 5 under the number of deaths from that disease in the preceding week), 1 from

scarlatina, 1 from typhus, 15 from whooping-cough (being a decrease of 3 as compared with the number for the preceding week), 1 from diphtheria, 1 from simple-continued fever, 3 from enteric fever, and 1 from diarrhoea. Among the 50 deaths from all causes registered in Cork are 2 from scarlatina and 1 from whooping-cough. The 22 deaths in Londonderry comprise 4 from whooping-cough; and the 24 deaths in Waterford comprise 3 from measles. The Registrars of the following Districts—viz., Belfast, Nos. 2, 4, and 5, refer to the presence of influenza.

In the Dublin Registration District the births registered amounted to 217—111 boys and 106 girls; and the deaths to 208—86 males and 122 females.

The deaths, which are 4 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·7 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 29·5 per 1,000. During the first nine weeks of the current year the death-rate averaged 39·6, and was 6·6 over the mean rate in the corresponding period of the ten years 1880–89.

Twenty-eight deaths from zymotic diseases were registered, being 3 over the average for the corresponding week of the last ten years, and 7 over the number for the week ended February 22. They comprise 3 from measles, 2 from influenza, 8 from whooping-cough, 9 from enteric fever, 1 from diarrhoea, &c.

Sixteen cases of enteric fever were admitted to hospital, being 5 over the admissions for the preceding week. Fifteen enteric fever patients were discharged, and 52 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, February 22.

The hospital admissions for the week include also 3 cases of measles and 3 of scarlatina, against 3 cases of the former and 1 of the latter disease admitted during the preceding week. Eleven cases of measles and 5 cases of scarlatina remained under treatment in hospital on Saturday.

No cases of typhus were admitted during the week. The admissions for the preceding week included 7 cases of that disease.

Deaths from diseases of the respiratory system, which had risen from 56 in the week ended February 8, to 71 in the following week and 74 in the week ended February 22, fell this week to 57, but this number is 6 in excess of the average for the corresponding week of the last ten years. The 57 deaths comprise 45 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 8, the mortality in twenty-eight large English towns, including London (in which the rate was 22·3), was equal to an average annual death-rate of 26·6 per 1,000 persons

living. The average rate for eight principal towns of Scotland was 26·7 per 1,000. In Glasgow the rate was 29·4, and in Edinburgh it was 23·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 32·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·5 per 1,000, the rates varying from 0·0 in nine of the districts to 8·7 in Dundalk. The 7 deaths from all causes registered in that district comprise 2 from measles. Among the 198 deaths from all causes registered in Belfast are 17 from measles (being 7 under the number from that disease in the preceding week), 1 from scarlatina, 6 from whooping-cough (being a decrease of 1 as compared with the number for the preceding week), 2 from diphtheria, 1 from simple-continued fever, 4 from enteric fever, and 2 from diarrhœa. The 19 deaths from all causes registered in Londonderry comprise 1 from whooping-cough and 1 from enteric fever, and the 9 deaths in Newry comprise 2 from diarrhœa.

In the Dublin Registration District the births registered amounted to 221—118 boys and 103 girls; and the deaths to 191—97 males and 94 females.

The deaths, which are 38 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the estimated population. Omitting the deaths (10 in number) of persons admitted into public institutions from localities outside the district, the rate was 26·7 per 1,000. During the first ten weeks of the current year the death-rate averaged 38·5, and was 5·4 over the mean rate in the corresponding period of the ten years 1880-89.

The number of deaths from zymotic diseases registered is 26, being 3 below the average for the corresponding week of the last ten years, and 2 under the number for the week ended March 1. The 26 deaths comprise 5 from measles, 6 from influenza (being 4 over the number from that cause in the preceding week), 8 from whooping-cough, 2 from enteric fever, 2 from diarrhœa, &c. In 3 of the 6 cases of influenza the disease was complicated with pneumonia, in 1 with bronchitis, and in 1 with pleurisy.

Twelve cases of enteric fever were admitted to hospital, being a decline of 4 as compared with the admissions for the preceding week, but 1 over the number for the week ended February 22. Nine patients were discharged, 2 died, and 53 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

During the week ended February 22, 7 cases of typhus were admitted to hospital; in the following week no cases were received; but during this week there were 4 admissions. Eight typhus patients were discharged,

1 died, and 18 remained under treatment on Saturday, being 5 under the number in hospital on Saturday, March 1.

The hospital admissions include also 2 cases of measles and 4 of scarlatina, against 8 cases of each disease admitted during the preceding week. Five cases of measles and 8 of scarlatina remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 74 in the week ended February 22 to 57 in the following week, fell this week to 52, or 2 below the average for the corresponding week of the last ten years. The 52 deaths comprise 32 from bronchitis, 12 from pneumonia or inflammation of the lungs, and 4 from croup.

In the week ending Saturday, March 15, the mortality in twenty-eight large English towns, including London (in which the rate was 20.9), was equal to an average annual death-rate of 23.6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25.2 per 1,000. In Glasgow the rate was 28.1, and in Edinburgh it was 20.7.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 30.6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3.9 per 1,000, the rates varying from 0.0 in eight of the districts to 17.5 in Dundalk—the 11 deaths from all causes registered in that district comprising 3 from measles and 1 from typhus. Among the 44 deaths from all causes registered in Belfast are 10 from measles (being 7 under the number from that disease in the preceding week), 13 from whooping-cough (being an increase of 7 as compared with the number for the preceding week), 3 from diphtheria, 1 from simple continued fever, 3 from enteric fever, and 4 from diarrhoea. The 18 deaths from all causes registered in Londonderry comprise 2 from whooping-cough; and the 24 deaths in Waterford comprise 5 from measles, 1 from simple continued fever, 1 from diarrhoea, and 4 from pulmonary complications following influenza.

In the Dublin Registration District the births registered amounted to 181—94 boys and 87 girls; and the deaths to 196—103 males and 93 females.

The deaths, which are 17 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28.9 in every 1,000 of the estimated population. Omitting the deaths (8 in number) of persons admitted into public institutions from localities outside the district, the rate was 27.8 per 1,000. During the first eleven weeks of the current year the death-rate averaged 37.6, and was 4.6 over the mean rate in the corresponding period of the ten years 1880–89.

The number of deaths from zymotic diseases registered is 23, being equal to the average for the corresponding week of the last ten years, but 3 under the number for the week ended March 8. They comprise 3 from measles, 2 from typhus, 3 from influenza, 7 from whooping-cough, 2 from enteric fever, 3 from dysentery, 1 from diarrhoea, 1 from erysipelas, &c.

Only 5 cases of enteric fever were admitted to hospital during the week, being 7 under the admissions for the preceding week and 11 under the number for the week ended March 1. Ten enteric fever patients were discharged, and 48 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

Seven cases of typhus were admitted to hospital against 4 for the preceding week; 4 patients were discharged during the week; and 16 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

The hospital admissions include also 4 cases of measles and 4 of scarlatina, against 2 cases of the former and 4 of the latter disease admitted during the preceding week. Four cases of measles and 10 of scarlatina remained under treatment in hospital on Saturday.

There has been a further decline in the mortality from diseases of the respiratory system, the number of deaths from these diseases registered being 46, or 6 under that for the preceding week, and 4 below the average for the eleventh week of the last ten years. The 46 deaths comprise 31 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 2 from pleurisy.

In the week ending Saturday, March 22, the mortality in twenty-eight large English towns, including London (in which the rate was 19·3), was equal to an average annual death-rate of 21·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·8 per 1,000. In Glasgow the rate was 27·3, and in Edinburgh it was 24·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 31·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·0 per 1,000, the rates varying from 0·0 in nine of the districts to 12·5 in Londonderry—the 18 deaths from all causes registered in that district comprising 6 from whooping-cough and 1 from diarrhoea. Among the 179 deaths from all causes registered in Belfast are 18 from measles (being 8 over the number from that disease in the preceding week) 8 from whooping-cough (being a decrease of 5 as compared with the number for the preceding week), 1 from diphtheria, 7 from enteric fever, and 4 from diarrhoea. The 29 deaths

in Limerick comprise 1 each from scarlatina and typhus. Among the 7 deaths in Waterford are 3 from measles, and the 10 deaths in Dundalk comprise 1 from measles and 1 from typhus.

In the Dublin Registration District the births registered amounted to 196—99 boys and 97 girls; and the deaths to 209—91 males and 118 females.

The deaths, which are 14 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·9 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 30·3 per 1,000. During the first twelve weeks of the current year the death-rate averaged 37·0, and was 4·0 over the mean rate in the corresponding period of the ten years 1880—89.

The number of deaths from zymotic diseases registered is 18, being 10 below the average for the corresponding week of the last ten years, and 5 under the number for the week ended March 15. They comprise 6 from measles, 1 from typhus, 1 from influenza, 4 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 1 from diarrhoea, 1 from erysipelas, &c.

Ten cases of enteric fever were admitted to hospital, being 5 over the admissions for the preceding week, but 2 under the number for the week ended March 8. Seven enteric fever patients were discharged, and 51 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

The number of typhus cases admitted to hospital is 4, being 3 under the admissions for the preceding week. One patient was discharged, 2 died, and 17 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, March 15.

The hospital admissions include also 6 cases of scarlatina and 2 of measles, against 4 cases of each of these diseases admitted during the preceding week. Fourteen cases of scarlatina and 4 of measles remained under treatment in hospital on Saturday.

Fifty-three deaths from diseases of the respiratory system were registered, being 7 over the number for the preceding week and 1 over the average for the twelfth week of the last ten years. They comprise 40 from bronchitis and 6 from pneumonia or inflammation of the lungs.

APOLLINARIS WATER.

As Mr. Walter Besant truly remarks in one of his recent popular novels, "This is an age of Apollinaris water." We are given to understand that during the year 1889 no fewer than fifteen millions eight hundred and twenty-two thousand bottles were filled at the Apollinaris spring.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of March, 1890.*

Mean Height of Barometer,	-	-	-	29·789 inches.
Maximal Height of Barometer (on 3rd, at 9 a.m.),				30·584 „
Minimal Height of Barometer (on 24th, at 4 p.m.),				28·904 „
Mean Dry-bulb Temperature,	-	-	-	44·6°.
Mean Wet-bulb Temperature,	-	-	-	42·1°.
Mean Dew-point Temperature,	-	-	-	39·2°.
Mean Elastic Force (Tension) of Aqueous Vapour,				·244 inch.
Mean Humidity, - - - - -	-	-	-	82·0 per cent.
Highest Temperature in Shade (on 12th), - - - - -	-	-	-	59·6°.
Lowest Temperature in Shade (on 3rd and 9th), - - - - -	-	-	-	31·2°.
Lowest Temperature on Grass (Radiation) (on 3rd)				24·0°.
Mean Amount of Cloud, - - - - -	-	-	-	64·1 per cent.
Rainfall (on 17 days), - - - - -	-	-	-	3·693 inches
Greatest Daily Rainfall (on 24th), - - - - -	-	-	-	·976 inch.
General Directions of Wind, - - - - -	-	-	-	W., S.W.

Remarks.

March, 1890, was a month of contrasts. As in 1889, it opened with very severe weather, a violent snowstorm being felt in the S.E. of England on the 1st and 2nd, the thermometer falling to 6° Fahr. at Hillington, in Norfolk. Warm and cold spells then succeeded each other to the close of the month, and heavy falls of rain occurred at times. On the whole there was a mean temperature above the average, and the rainfall also was in Dublin largely in excess. The mean height of the barometer was ·415 inch below that of February, but ·049 above that of January, 1890.

In Dublin the mean temperature (45·1°) was considerably above the average (43·1°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44·6°. In the twenty-five years ending with 1889, March was coldest in 1867 and 1883 (M. T. = 39·0°), and warmest in 1868 (M. T. = 47·3°). In 1876 the M. T. was 41·1°, in 1879 (the cold year) it was 42·5°, in 1888 it was as low as 39·8°, and in 1889 it was 44·0°. As a general rule, February in Dublin is only a shade colder than March. This is due to the fact that the Continental anticyclone usually embraces the British Isles and Scandinavia in March, causing easterly winds. In the present year, however, February was 3·6° colder than March.

The mean height of the barometer was 29·789 inches, or 0·134 inch below the average value for March—namely, 29·923 inches. The mercury rose to 30·584 inches at 9 a.m. of the 3rd, and fell to 28·904 inches at 4 p.m. of the 24th. The observed range of atmospherical pressure was, therefore, 1·680 inches—that is, nearly an inch and seven-

tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $44\cdot6^{\circ}$, or $3\cdot8^{\circ}$ above the value for February, 1890. Using the formula, *Mean Temp.* = *min.* + (*max.* - *min.* \times $\cdot 485$), the value becomes $44\cdot9^{\circ}$. The arithmetical mean of the maximal and minimal readings was $45\cdot1^{\circ}$, compared with a twenty-five years' average of $43\cdot1^{\circ}$. On the 12th the thermometer in the screen rose to $59\cdot6^{\circ}$ —wind W.S.W.; on the 3rd and 9th the temperature fell to $31\cdot2^{\circ}$ —wind, N.E. and W.N.W. respectively. The minimum on the grass was $24\cdot0^{\circ}$ on the 3rd. The rainfall was as much as $3\cdot693$ inches, distributed over 17 days. The average rainfall for March in the twenty-five years, 1865–89, inclusive, was $2\cdot061$ inches, and the average number of rainy days was $16\cdot5$. The rainfall, therefore, was much above the average, while the rainy days were slightly above it. In 1867 the rainfall in March was very large— $4\cdot972$ inches on 22 days; in 1888, $3\cdot753$ inches fell on 18 days; in 1866 also $3\cdot629$ inches fell on 21 days. On the other hand, in 1871, only $\cdot 815$ of an inch was measured on 12 days; and in 1874 only $\cdot 953$ of an inch fell, also on 12 days. In 1887 (the "dry year"), $1\cdot485$ inches of rain fell on 15 days, and in 1889 $1\cdot076$ inches fell on, however, as many as 17 days.

The atmosphere was foggy on the 19th, 20th, and 27th. High winds were noted on 15 days, reaching the force of a gale on 4 days—the 7th, 8th, 10th, and 24th. Snow or sleet occurred on the 1st, 2nd, 9th, 16th, 18th, and 23rd; and hail fell on the 1st, 2nd, and 8th. The temperature exceeded 50° in the screen on 19 days, compared with only 2 days in February, and 17 days in January; while it fell to or below 32° in the screen on 4 days, compared with 5 in February and only 1 day in January. The minima on the grass were 32° , or less, on 16 nights, compared with 18 nights in February and 15 nights in January. On 2 days the thermometer did not rise to 40° in the screen.

The period ending on Saturday, the 8th, was divided into a very cold and a mild although stormy period—the former lasting until Tuesday the 4th in Ireland, but until Wednesday in England. A small but well-marked depression—which on Saturday, the 1st, had quickly travelled down the east coast of Great Britain as far as Spurn Head, and thence in a southwesterly direction across England—was found over Brittany on the 2nd. It caused heavy falls of snow in the S.E. of England, and showers of hail and snow in most parts of the country. In the wake of this depression an extraordinary fall of temperature took place in the centre and S.E. of England. Early on Tuesday morning the thermometer fell to 18° at Loughborough, 17° at Oxford, 15° in London, 14° at Cambridge, 13° at Dungeness, and 6° at Hillington, Norfolkshire—these were the lowest temperatures experienced in England during the present winter. Milder weather had already set in at the northern stations and spread quickly southwards. A series of deep depressions now travelled

eastward across Northern Europe, causing gales, frequent showers, and very unstable temperatures. At 8 a.m. of Friday the barometer varied from 30·15 inches at Rochefort in France to 28·60 inches at Christiansund, in Norway. At 11 a.m. of Saturday a violent squall of hail, rain, thunder and lightning passed over Dublin. The mean height of the barometer during the first week (2nd-8th inclusive) was 30·012 inches. The mean temperature was 42·5°, the mean dry bulb readings at 9 a.m. and 9 p.m. being 42·2°. Rain was measured on four days, the total quantity being ·256 inch, of which ·120 inch fell on Saturday.

During the greater part of the second week (9th-15th, inclusive), strong, squally, westerly and south-westerly winds prevailed, but the weather remained for the most part dry. The general distribution of atmospherical pressure was—low in the north, high in the south. Hence the westerly winds of the period. On Sunday, the 9th, a frost occurred in the rear of a depression, which had passed eastwards across the lowlands of Scotland the previous evening. The wind afterwards backed gradually from N.W. to S.W. and finally to S., from which last point it blew freshly on Friday night. On Tuesday and Wednesday the thermometer rose to 60° or upwards in the shade at several stations in Great Britain—the highest reading of all being 63° at Aberdeen on Wednesday. In Dublin the mean height of the barometer was 29·842 inches. The mean temperature was 47·9°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 48·1°. The thermometers in the screen fell to 31·2° on Sunday but rose to 59° on Wednesday. Rain was measured on three days—the total quantity being ·857 inch. Of this amount ·190 inch was credited to Sunday, and ·684 inch to Saturday.

At the beginning and close of the third week, changeable, rainy weather prevailed in Dublin—during the intervening period it was chiefly fine and quiet. Between Tuesday, the 18th, and Friday, the 21st, a deep depression travelled northwestwards from the south of Germany to the west of Scotland. It caused very unsettled weather, with heavy falls of rain and sleet, in the S.E., E., and N.E. of Great Britain, while it was very fine in Ireland. The week began with a deep and complex depression lying over this country—the barometer being as low as 29 inches at 8 a.m. of Sunday in Ulster and Leinster. Throughout the week numerous areas of low pressure lay over Western Europe, travelling in anomalous and erratic directions. Hence the changeable weather of the period. In Dublin the mean height of the barometer was 29·495 inches. The mean temperature was 41·7°. The mean of the dry bulb readings at 9 a.m. and 9 p.m. was 41·5°. The rainfall was ·553 inch, distributed over four days. Of this amount, ·138 inch was measured on Monday and ·244 inch on Saturday. Sleet fell on Sunday and Tuesday. There were fogs on Wednesday and Thursday.

The chief characteristic of the weather during the week ended Saturday,

the 29th, so far as Dublin is concerned, was a 'frequent and heavy downpour of rain—the precipitation amounting to 2·003 inches on five days. At the same time a decided increase of temperature was noted generally, so that on Friday the 28th the thermometer rose to 66° in London, 73° in Paris, and 79° at Biarritz. During the week several depressions crossed the British Islands in an easterly direction. Of these, the deepest was observed on Monday, when the barometer sank to 28·904 inches in Dublin, and a fresh S.E. gale and incessant rain prevailed. Two moderately fine days succeeded, but the weather became broken and rainy once more on Thursday, gloom and continuous rain occurring on Friday. Bright, dry weather and a fresh westerly breeze followed on Saturday. In Dublin the mean height of the barometer was 29·635 inches, pressure ranging between 28·904 inches at 4 p.m. of Monday (wind, E.S.E.), and 30·052 inches at 9 p.m. of Saturday (wind, W.). The mean temperature was 48·3°; the mean dry bulb temperature at 9 a.m. and 9 p.m. being 47·2°. The rainfall amounted to 2·003 inches on five days. Of this large quantity, ·976 inch was registered on Monday and ·469 inch on Friday.

The last two days were fine, quiet, cool, and dry—the month going out "like a lamb," as it had come in "like a lion."

The rainfall in Dublin during the three months ending March 31st has amounted to 7·470 inches on 45 days, compared with 5·738 inches on 53 days during the same period in 1889, 6·097 inches on 41 days in 1888, and a 25 years' average of 6·411 inches on 51·0 days.

PERISCOPE.

MEDICAL EDUCATION IN THE UNITED STATES.

FROM a "Report on Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada, 1765–1889," issued by the Illinois State Board of Health, we learn that the total number of medical colleges at present existing in North America (exclusive of Mexico) is 131, of which 118 are in the United States. In 1886 the numbers were 129 and 117. The standard of medical education, as shown by the requirements of the schools, is being steadily raised. Thus, in 1880, 45 colleges required evidence of previous education for matriculation; in 1889, 117. In 1880 only 22 medical schools required attendances on three or more courses of lectures; in 1886 the number had risen to 41; and it is now 47. In 1880 hygiene was taught in 42 colleges, medical jurisprudence in 61; in 1886 the number was 110 for each subject; and now the figures are 117 and 112. The *Journal of the American Medical Association* thus proceeds:—"Since the Report of 1886 the average duration of lecture terms has been increased.

The average for all the regular schools is now 25·3 weeks. This average, it may be said, is cut down by the 17 weeks' term of the Medical College of Georgia, and the 19 weeks' term of the Woman's Medical College of Cincinnati. One hundred and fifteen schools now have terms of five months and more, against 110 in 1886-87; 66 have terms of six months and more, against 63 in 1887-88, and 55 in 1886-87. A number of colleges have signified their intention of requiring four years' study and three years' lecture course in the near future, in accordance with the resolution adopted in July, 1887, by the Illinois State Board of Health, 'that the phrase "medical colleges in good standing" . . . is hereby defined to include only those colleges which shall, after the sessions of 1890-91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation.' The Report shows that there has been a gradual increase in the number of matriculates since 1884-85, both in the United States and Canada, while in the United States the number of graduates has been about the same. The percentage of graduates to matriculates has therefore steadily diminished in the United States, from an aggregate average of 36·3 in 1881-82 to 30·3 per cent. in 1887-88 for all schools of medicine. The percentage of graduates to matriculates in the regular schools has decreased from 37·1 in 1881-82 to 29·6 in 1887-88. For the last calendar year this percentage varied in the individual colleges in the United States from 6·6 to 52·1. The Report says:—"The percentage of matriculates to graduates is kept at a high point largely by the colleges in Atlanta, Baltimore, Louisville, Nashville and St. Louis, and those in Indiana."

CHYLOUS ASCITES.

At the recent meeting of the Association of American Physicians a tabulated Report, with a condensed summary of thirty-three cases of chylous ascites, was presented. Of the thirty-three cases nineteen died, nine recovered, and in five the result is not stated. In seventeen of the cases tapping was resorted to, and in some of the cases frequently repeated. In two cases laparotomy was performed, with recovery of both patients.

ARSENITE OF COPPER.

In the November number of the *Medical News*, a large number of physicians testify as to the great value of arsenite of copper in cases of cholera morbus, cholera infantum, and in the diarrhoea of typhoid. "The best method of administering the drug is in small and frequently repeated doses. Thus, in a case of cholera morbus, the dose for the day (1-100 grain) is dissolved in from four to six ounces of water, and a teaspoonful of this is given every ten minutes for the first hour, and afterwards at intervals of one hour."

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

New Suppositories.

MR. JOHN EVANS, the well-known chemist, of Dawson-street, Dublin, has submitted to us samples of certain suppositories which he has recently introduced, and which promise to be of much use. Of these the first are suppositories of glycerin of two sizes—the larger containing one drachm, and the smaller half a drachm of pure glycerin. They are portable and convenient, and form an excellent substitute for the now often used glycerin enema. It is worth noting that about half an hour elapses before these suppositories act, the oil of theobroma capsule taking that time to dissolve. Occasionally, also, the capsule breaks, if unskilfully handled, while it is being pushed through the anus. The “Emollient Suppositories,” made in three sizes—*parva*, *media*, and *magna*—are intended for use in habitual constipation. They act by increasing peristalsis. If so desired, any active agent may be added—such as aloin, acetate of lead, belladonna, morphin, or tannin. A third novelty is the “Rhatany Suppository,” which is likely to prove a valuable astringent, particularly in cases of hæmorrhoids.

Extractum Sennæ Leguminæ Liquidum.

THIS is also one of Mr. Evans's preparations. As pointed out in a paper by Dr. Macfarlane, in the *Lancet* for July 24, 1889 (page 164), senna pods appear to possess the laxative without the griping properties of senna leaves. A preparation made from the pods is, therefore, especially suitable for children and young persons.

Elatine.

MR. EVANS has sent us a specimen of concentrated aqueous solution of fir tar (elatine), which is recommended as beneficial in chronic bronchitis, asthma, sore-throat, and catarrhs. It is not unpalatable, and may be taken alone or in water. Children like it mixed with milk, or sugar and water. It may also be given in combination with syrup of the lactophosphate of lime. Another preparation is the lozenge of chlorate of potassium and elatine, the formula for which Mr. Evans has also drawn up with great care.

“Salt Regal.”

THIS delightful preparation, called also “Saline Regal,” reminds one of Persian sherbet. It is a fine white powder, which when mixed with water effervesces freely, and gradually assumes a delicate pink or purple colour. This is, no doubt, owing to the presence of a minute quantity

of permanganate of potassium, which slowly dissolves in the water and produces the characteristic and well-known colour and taste of that salt.

This ingenious combination of a disinfectant with a palatable effervescing salt renders "Salt Regal" a very useful preparation, for it both purifies the water with which it is mixed and must act as a deodoriser and disinfectant of the mouth. In addition it fulfils many indications—allaying thirst, acting as a refrigerant and mild laxative, and relieving nausea or sea-sickness and vomiting. Children take "Salt Regal" readily, either in water, or as a sweetmeat. We know a little fellow of four years, who was given a dose while suffering from a gastric attack, and who repeatedly called for the draught afterwards, so pleased was he with it.

The dose for an adult is a large teaspoonful in half a tumblerful of cold water. A child may be given a small teaspoonful in a tumbler one-third full of cold water. "Salt Regal" is patented throughout the world, but may now be procured almost anywhere.

"Vinolia" Soap.

MM. BLONDEAU ET CIE, of London, Paris, and New York, have placed in our hands a sample box of the now well-known and popular "Vinolia" soap. It is described as a superfatted soap devoid of free alkalis. Hence it does not dry or weaken the skin and hair, and is suitable for use in the nursery, as well as in many skin affections.

"Vinolia" soap is manufactured by a new process, and differs from other soaps in containing an admixture of unsaponified cream instead of an excess of alkali, besides an emollient ingredient which counteracts the alkali set free when the soap dissolves in water. Another advantage is that the soap is moulded by compression only. Lastly, it is stated to be free from dextrin or British gum, starch, gelatin, pumice stone, baryta, resin, and such like ingredients. "Vinolia" soap is certainly expensive, the toilet preparation costing half-a-crown per box of three tablets, and that for medical use, two shillings per box of three tablets. But, then, is it not worth while to pay handsomely for a good article?

Vin Tonique Mariani.

THIS tonic wine is prepared from the *Erythroxylon coca* (la coca du Pérou). About this plant M. Mariani has written an interesting book, which we hope to review in our next number. Suffice it to say here that the wine is an agreeable and, we believe, an efficacious tonic and stimulant. A claret glassful may be taken before or after the principal meals. Delicate children may be given a proportionate quantity.

failed to make any progress. DR. SMITH made all the pharmaceutical preparations and put the work through the press.

On October 18 (St. Luke's day), 1851, he was elected Senior Censor, although not a candidate for the office of Censor, and on the same day he was appointed Vice-President by the new President, Dr. Montgomery. But these collegiate honours were only a foretaste of what was to come. On October 1, 1858, he was by a large majority elected Representative of the King and Queen's College of Physicians in Ireland on the General Council of Medical Education and Registration of the United Kingdom, and to this responsible post he was re-elected on each succeeding St. Luke's Day *without opposition* for twenty-nine years. It was not until May, 1889, that he resigned the trust, when he received the grateful thanks of his College, which he had so long and ably represented in the counsels of the great Medical Parliament of the United Kingdom. Nor does this exhaust the long list of his collegiate preferments. In 1864 he was elected King's Professor of Materia Medica and Pharmacy in the School of Physic in Ireland, in succession to Dr. Jonathan Osborne, deceased, and in 1872 he was chosen Treasurer of the College in room of Dr. Henry Dwyer, also deceased. This latter post he held to the day of his death, and to his ability as a financier the College owes much of its present prosperity. He was a born treasurer; nothing could exceed the accuracy and neatness with which the somewhat complicated accounts of the College were kept during his treasurership, extending over eighteen years.

Strange enough, it did not fall to the lot of AQUILLA SMITH to occupy the Presidential Chair of the College he served so faithfully and loved so well—but none the less he was for many years looked up to as the Nestor of the College. It is no disparagement to his sound judgment to say that he viewed with something akin to dismay modern medical legislation, with its conjoint examination schemes, direct representation on the General Medical Council, &c. From such like "reforms" his conservative instincts recoiled, and against them he often protested, but in vain.

The esteem in which AQUILLA SMITH was held by the President and Fellows of the College of Physicians was shown by the presentation to his family on St. Luke's Day, 1889, of an admirable portrait of him in oils, executed by his namesake, Mr. Catterson Smith, F.R.H.A., at the request of the Fellows of the College.

This portrait, which is a striking likeness, was immediately afterwards presented to the College, in the beautiful Statue Hall of which

it finds a fitting resting-place. A tablet affixed to the frame of the picture bears the following inscription :—

AQUILLA SMITH, M.D. (HON.), DUBL.,
Representative of the College on the General Medical Council for thirty years.
Presented by the Fellows to the family of DR. A. SMITH
on St. Luke's Day, 1889,
and given by them to the College.

Although not a prolific writer on medical subjects, AQUILLA SMITH was a most learned physician and man of science. In 1835 he was admitted a Member of the Royal Irish Academy, and four years afterwards he was elected on the Council of that learned body and a Member of the Committee of Antiquities in the room of Sir William Betham, resigned. In 1841 he was elected Treasurer of the Academy in place of Dr. Orpen, resigned. These posts he was unable to hold for any length of time, as they proved to be inconsistent with his professional pursuits. To the proceedings of the Academy he contributed six interesting papers on Irish coins, the study of numismatics being a special and favourite pursuit with him. The Irish Archæological Society published several important papers on archæological topics from his pen, and in the Transactions of the Kilkenny Archæological Society will be found, from 1852 onward, a second series of articles written by him on numismatics. Lastly, the pages of the Numismatic Chronicle, from 1863 to 1883, contain a third series of similar articles. His etchings of old coins are like copper-plate engravings; they are the most perfect and beautiful things of the kind we have ever seen. Many of them are master-pieces, and this is the more extraordinary as we believe DR. SMITH received little or no instruction in drawing.

It is right to mention that DR. SMITH was also an excellent mineralogist and a skilled worker at the blow-pipe, on the use of which he published a small book.

As to his contributions to medical science, we are proud to think that—few as they were—almost without exception they were published in this journal. At page 210 of the seventeenth volume of our first series will be found a paper entitled "Contributions to the History of Medicine." It was read by him at a meeting of the Fellows and Licentiates of the College of Physicians, in the College Hall, on Monday, January 20, 1848. At page 81 of the nineteenth volume another paper will be found, namely—"Some Account of the Origin and Early History of the College of Physicians in Ireland." This was read at the College on Monday, January 18, 1841. To the number of the Journal

for February, 1847 (Vol. III., New Series, page 281), DR. SMITH also contributed a biographical memoir of "David MacBride, M.D.," an eminent physician, who attained the highest position as a practitioner of midwifery in Dublin in the eighteenth century, having been one of the original surgeons of the Meath Hospital at its foundation in 1753. Dr. MacBride is believed to have attended the Countess of Mornington at the birth of the hero of Waterloo.

Although he was by no means a brilliant lecturer, DR. SMITH's lectures on *Materia Medica* were models of their kind from their careful preparation and scientific arrangement. As a public speaker, also, DR. SMITH wanted many of the elements of success, but his earnestness, the mastery which he wielded over his subject, his known integrity of purpose, more than atoned for any defects in eloquence and mode of delivery; the result was that he was always listened to with attention and respect, and his views more often than otherwise prevailed.

DR. SMITH was for many years a widower, but he lived a tranquil, happy life, surrounded by his sons and daughters, to whom his death comes as an irreparable loss. Nor is the sense of bereavement limited to his family—at the King and Queen's College of Physicians, to which his life-work was so largely devoted; in the University of Dublin; at the Royal Irish Academy; and at the University Club, where his familiar figure was often to be seen in the late afternoon—AQUILLA SMITH will for many a day be sorely missed. He was a representative man, and may be regarded as one of the last links which bound the old-time to the modern ideas of medical education and examination. In his own College he was the senior of the Fellows, with one notable exception—Dr. William Crofton Beatty, who was chosen Fellow on June 8, 1829, nearly 61 years ago, and who still enjoys a green old age in his home at Cheltenham.

This memoir may fittingly close with a transcription of a resolution which was unanimously adopted by the President and Fellows of the King and Queen's College of Physicians, on Saturday, April 5, 1890 (Easter Eve), that being the first occasion upon which they met after DR. SMITH's death:—"Resolved—That the President and Fellows of the King and Queen's College of Physicians in Ireland desire to record their deep regret at the death of their late Senior Resident Fellow, DR. AQUILLA SMITH, and to express their sense of his long, faithful, and valuable services to the College, as well as their sincere sympathy with his family in their bereavement."

J. W. M.

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OF

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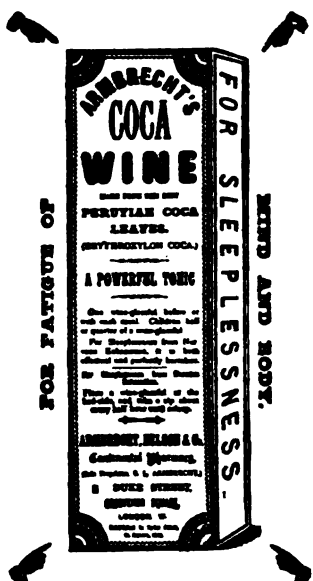
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OF

MEDICAL SCIENCE.

JUNE 2, 1890.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVIII.—*Massage*.^{*} By KENDAL FRANKS, M.D., Univ. Dubl.; Ex-Sch., Trin. Coll. Dubl.; Fellow and Member of Council, Royal College of Surgeons; Surgeon to the Adelaide Hospital; Surgeon-in-Ordinary to his Excellency the Lord Lieutenant.

THE first case in which I employed massage was in the year 1883, and as I have had recourse to it somewhat extensively ever since, I thought it might be of interest to the Fellows of the Royal Academy of Medicine if, in the course of a communication before this Section, I were to give them the results of my experience. I am aware that when a member of our profession warmly advocates any method of treatment, especially if it be considered a novel one, he runs the risk of being dubbed a "faddist," and exposes himself to the charge that he treats everything by the one method, and that he has run away with an idea. Some of you will remember at the Surgical Society how the advocates of antiseptics in surgery were once described as sheep following a bell-wether. Similar charges may be brought against the advocates of massage, though perhaps in different language, especially if the advocates display the least enthusiasm. Well, I believe that members of our profession have a right—nay, ought to be enthusiastic over any method of treatment which promises to be remedial, provided that they satisfy themselves first that the method has a solid and scientific foundation—that they are sure of the ground upon which they stand.

^{*} Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 11, 1890. [For the discussion on this paper, see p. 554.]

In the first place, I hope to show you that massage is not a novel method of treatment, that, in fact, it is nearly as old as the history of medicine itself, that it has been known and practised in all countries and at all times, that it fell into disuse as a part of legitimate treatment, owing chiefly to the fact that it was allowed to slip gradually into the hands of charlatans and quacks, but that in recent times it has been placed on a scientific basis, the indications for its use are being studied, that it is capable of very large application both in medical and surgical practice—sometimes with the most astonishing results—and that it behoves us to keep it above suspicion, within the realms of legitimate and scientific medicine, and not to allow it to degenerate into a system of empiric manipulations, the hope of the bone-setter and the refuge of the quack.

The word “massage,” immediately derived from the French word “masser,” to rub, to knead, owes its origin, I believe, to an Arabic root; it implies a rubbing, kneading, stroking of the body—in short, all those manipulations which have come to be understood by the word *massage*. The employment of the process itself, both as a hygienic and therapeutic measure, dates back to the earliest times. In the Odyssey we read that the women rubbed and kneaded the bodies of the heroes, anointing them with fragrant oils; and Hippocrates, 380 B.C., wrote that “the physician must be experienced in many things, but assuredly also in rubbing, for rubbing can bind a joint that is loose, and loosen a joint that is too rigid. And again, rubbing can bind and loosen, can make flesh and cause parts to waste. Hard rubbing binds; soft rubbing loosens; much rubbing causes the parts to waste; moderate rubbing makes them grow.” And again he writes, although he must have been ignorant of the circulation of the blood and the direction of the lymph channels—“that rubbing upwards in the case of the limbs has a more favourable effect than rubbing downwards.” Thus we see that hygienically and therapeutically the art of massage was well understood and valued by the ancients. It formed an essential part of the celebrated baths so generally employed among the Greeks and the Romans. Under Nero, Domitian, and Trajan, the bathing establishments were constructed in the most convenient and luxurious manner. They consisted of six large apartments in which the various manipulations belonging to the baths were carried out. First, in the 5th apartment, which was called “Tepidarium,” the bathers were made to perspire freely by means of certain gymnastic

exercises. They were then stroked and rubbed down over the whole body with peculiar skin rubbers (Strigiles) by slaves. The Masseurs, or Aliptæ, as they were called, then came upon the scene, and they pinched and kneaded the body, ending up by bending all the joints and stretching them until they cracked (*Ac summum dominæ femur exclamare coëgit*, as it is called in Juvenal, Sat. VI., 423). After this the Alipili appeared, and with small nippers removed the hairs from the body, after which the Unctores anointed the body with fragrant oils.

The process, which we call massage, was not, however, confined to the Greeks and Romans. It was employed as a means of cure by the wise men of India at the period when Alexander the Great entered their country. Lepage, in 1813, mentions, in his historical account of medicine among the Chinese, how massage was employed among them and had been borrowed by them from the Hindoos in antient times. The Chinese rub the whole body with the hands, softly squeeze the separate muscles, and pull at all the joints. Again, in 1845, Dr. Wise published at Calcutta a commentary on the Hindoo system of medicine, in which the duty is urged to rise early in the morning, to cleanse the mouth, to anoint the body, then to exercise and to undergo shampooing. Again, the historian Forster, who accompanied Cook on his travels, gives an account of their reception by a friendly chief in the island of Tahiti:—"In one corner of the hut a mat is spread out on the dry grass. A great number of our friend's relatives came, and the chief's daughter, who excelled in beauty by the loveliness of her features, the voluptuousness of her form, and the whiteness of her complexion, smiled at us in a friendly way, and made many efforts to prove herself agreeable. In order to remove our weariness she rubbed our arms and legs with her hands, and allowed the muscles to glide softly through her fingers. I cannot say whether these operations facilitated the circulation of the blood or whether they restored elasticity to the tired muscles, but their result was beneficial in the extreme, and our powers were fully restored."

In the *Gazette des Hôpitaux* for 1839, we read of the manner in which massage used to be employed in the island of Tonga. If anyone feels tired after exertion, he lies down and some of his servants practise upon him various operations which are known under the name of Toogi-Toogi, Mili, and Fota. The first of these consists in striking the various parts of the body with the closed fist, softly and rapidly, and corresponds to one of the methods of what we call

tapotement. The second signifies the same thing as *effleurage*, which is thus described by Murrell:—"This is a stroking movement made with the palm of the hand, passing with various degrees of force over the surface centripetally. It may be practised with the fingers or with the thumb alone." The third is described in the *Gazette* as a squeezing and pressing of the skin with the fingers; this is identical with part of the manipulations now known as *pétrissage*. The *Gazette* further goes on to describe its use in fatigue, in headache, and in various painful affections to which the flesh is heir.

From the above short history, which could, were it necessary, be considerably extended, we see that massage, far from being a novelty which interested parties and enthusiasts would introduce into the practice of medicine and surgery, is in reality "a primitive institution coincident with the hygienic and therapeutic requirements of mankind," and has been employed at all times and among all the nations of the globe.

The question naturally arises, how it came to pass that a method of cure of such generally recognised efficacy should have fallen into disuse amongst members of our profession, and should have been for so long a time neglected? Dr. Bela Weiss, of Vienna, in an article in the *Wiener Klinik* for 1879, explains this extraordinary fact thus:—"In antient times massage was employed by the most illustrious physicians. Hippocrates recommended its use in the most impressive language. It was an integral part of the exercises of the gymnasts, and amongst these were the most renowned doctors—Hippocrates, Diocles, Antyllios, Archigenes, Galen, &c. Massage was then held in honour, and deserved to be so; but as in the course of the degeneracy of morals it fell into the hands of slaves and courtesans, the physicians ceased by degrees to employ it, so that it became more and more a welcome source of profit to magicians, herds, and old women."

Many names might be mentioned in connection with its revival; for in every country physicians and surgeons alike have recognised that this method of manipulating the body rests on a scientific and physiological basis. Mezger, of Amsterdam, has shown, by the fame of the results he obtains, of what massage is capable; and Professor Von Mosengeil by his experiments and researches has, perhaps, done more than any one man to remove from massage the stigma of charlatanism, and to place it in the ranks of scientific medicine; and I do not think that its advocates in this country

need be ashamed of employing and testing a method of treatment which has received the sanction of such men as Billroth, Esmarch, Trousseau, Langenbeck, Weir Mitchell, and many others whom I might name.

To refuse to adopt and practise massage because for centuries its exponents were quacks and charlatans manifests the same spirit which animated surgeons not to touch a stiffened joint because "bone-setters" made fortunes by rupturing adhesions under the impression that they were reducing dislocations, and frequently cured when the surgeon had failed, and is as logical as it would be to refuse to prescribe a pill or a bottle because the public were treated by Holloway's Pills or Warner's Safe Cure.

The treatment by massage in former times was undoubtedly empiric. People discovered that its employment in health as a hygienic process was followed by sensations of well-being over the whole body. Hence it became an essential constituent in the baths of the antients. Even to-day it is practised in eastern countries with a thoroughness and perfection which is unknown in the so-called Turkish Baths in these countries. In "Letters on Egypt," an enthusiastic writer describes how massage is employed in the Egyptian baths, and the exquisite sensations which the bather subsequently experiences:—"One feels a lightness and suppleness hitherto unknown; it appears as if one were born anew, and lived for the first time." Its use in therapeutics had a similar origin. It relieved pain, it effected cures in certain diseases, *therefore* it was widely employed by those whose duty it was to treat disease. But the practice now differs from then, chiefly in this—that medical men employing massage can give a reason for the faith that is in them. Let us for a moment look at the process by which a limb is nourished. The material required to replace the waste of tissue continually going on in a limb is conveyed to it by the arteries, and when it enters the minute capillaries this nourishing material, the blood plasma, passes through its walls into the intercellular spaces around, thus bathing the various tissues with this nourishing fluid. In passing through the walls of the capillaries the plasma loses about one-half of its albumen and two-thirds of its fibrin, the other constituents remaining practically unaltered. Thus the quality of the nourishment supplied to the tissues is in direct proportion to the quality of the blood. In the tissues the plasma undergoes certain changes, due to the interchange which continuously goes on. It parts with those materials which the tissue of

the part requires, and it takes up the waste material thrown off—that is, the products of combustion. This altered fluid then makes its way between the cells of the part till it reaches the lymphatic capillaries, and thence into the lymphatic vessels, whence it passes to the glands and through them, finally rejoining the blood-current through the thoracic duct. Its passage into the capillaries is chiefly due to the *vis-à-tergo* of the accumulating fluid behind it. Its passage through the lymphatic vessels is, in the main, brought about by the pressure exerted upon them by the contraction of the muscular fibres between which they pass. Later on the suction power of the right auricle comes into play. Now, the proper nourishment of a limb depends upon the efficiency and perfection of all these factors. It may fail because the blood is poor in its nourishing constituents; or because its circulation is so feeble that sufficient material is not supplied; or the return of the venous blood is slow or impeded, and thus checks the arterial supply; or the onward flow of the used-up plasma is sluggish. In health the quality of the blood is insured by the proper digestion and absorption of proper food. The circulation in the veins and lymphatics chiefly depends on the muscular contractions in exercise. But in disease these conditions do not hold. Take, for example, a broken leg. Rest is necessary for its cure—but this very rest at once abolishes those muscular contractions upon which the circulation in the veins and lymphatics mainly depends. The arterial supply, at first, at any rate, is unimpaired. What is the result? Increased blood pressure at the part (I am not now taking the pathological condition of inflammation into consideration), and consequently an increased exudation of the blood plasma. Coincidentally the lymphatic flow is checked, because the muscles no longer squeeze the fluid along the well-valved vessels, and oedema of the limb results. Moreover, the interchange between the material which is to build up the new tissues and the waste material—whether of natural combustion, or of inflammatory exudation, or of extravasated blood—is so materially interfered with that the process of repair is slow. And yet the ordinary treatment of a fracture by rest and splints does nothing to remedy this evil, and the only provision usually made to assist nature is to elevate the limb, and by gravity to replace the want of muscular contraction.

This is a surgical example, but medicine can furnish many on her own account. For the preservation of ideal health it is necessary to maintain an even balance among the various functions of

the body. No more beautiful example of this is seen than that—whether in hot climates or in cold, whether in exercise or at rest—the temperature of the body is maintained at almost a stable quantity. The preservation of this equilibrium among the various functions is due to the controlling influence of the nervous system. Now take an example with which we are all familiar:—A girl for some reason or other is in poor health. Perhaps some violent shock of the nervous system is the cause. The effect is seen in an upsetting of the nervous control over this condition of equilibrium. The digestive organs are perhaps the ones to suffer. She is the subject perhaps of what Sir William Gull described in 1888 as *anorexia nervosa*. As a result the tissues waste and she gets thin. The muscles suffer—they are reduced in size and in quality, and are incapable of making the amount of exertion to which they were accustomed. The balance between repair and waste is lost. The tissues get overcharged with the products of combustion, and the quality of the blood itself is so impaired that even were the lymphatic circulation better than it is, still the plasma would not supply the nourishment required. The nervous system, including the brain, suffers from this same want of supply, and its functions become more and more impeded. Thus the evil cycle goes on. Perhaps during the progress of the case that undefinable function of the nervous centres, which we call self-control, is lost, and the sufferings of the patient are increased by being dubbed hysterical, and consequently the location of her disease is at once transferred to a portion of her body which may or may not be entirely innocent of the state of her general health. How is such a case dealt with? The nerve centres, to recover their function, require absolute rest; and here again rest means loss of exercise and increasing anorexia. Here again the absence of muscular exercise implies a sluggishness of the lymphatic circulation, with overloading of the lymph spaces in the tissues, with accumulated waste products, and consequently an inability of the tissues to take up proper nourishment from the blood, even supposing that it were all that could be desired, which it is not. In the days before massage was re-introduced by the writings and teachings of Weir Mitchell, we tried tonics to the nervous system, and tonics generally, iron for the blood, delicacies to tempt the palate, artificially digested food for the stomach, and, when all these had failed, change of air either to the Continent or to another practitioner.

But now massage steps in to help us to keep our patients and to

cure them. In the last example the nervous system gets its needed rest by keeping the patient strictly in bed, and as every muscular movement, and every mental excitement or disturbance, means so much waste of nervous force, which we are endeavouring to store up, we forbid all movement, and we remove her from home surroundings and visitors, and everything which can possibly supply her with food for thought, which is generally synonymous with food for anxiety or worry. In the next place we massage her. Time will not permit me to describe the method of carrying out these various manipulations. They are best learnt by a little practical experience. When I first commenced to employ massage, I began by learning to do all the manipulations myself, and I have ever since found it of the greatest practical use. For though it is impossible for a medical man to massage his own cases, and most frequently inexpedient, still, in certain cases requiring only a local and limited massage, he should be able to do it when necessary, as I have on more than one occasion experienced. But in the majority of cases, which must be handed over for manipulation to a well-trained nurse or masseur, it is of inestimable value to be able to see, as it is being done, that it is correctly done, and, if faulty, to show how to do it. Suffice it here to say that, beginning at the toes and working steadily upwards, first the skin and, secondly, the muscles and deeper structures are submitted to a process of gentle pinching, kneading, and percussion, until the whole body has passed through the hands of the operator. In cases of general massage, such as the one under consideration, I prefer to employ it twice a day. I have found that an afternoon's massage is more efficacious than when this time is used in applying electricity, as recommended by Weir Mitchell. In some of the earlier cases I tried massage in the forenoon and electricity in the afternoon, but I have obtained better results by dispensing with electricity and employing massage alone both in the forenoon and afternoon. The morning *séance* occupies about two hours; the one in the afternoon about an hour and a half. I think it scarcely possible to go over the whole body in an ordinary sized adult in a shorter time. Some patients, especially neurotics, complain of a certain amount of soreness and pain, but this disappears in the course of a few days. Others like, or at any rate do not mind, the process from the start. I have myself undergone massage of one arm and shoulder and the side of the neck every day for a fortnight for rheumatism, which baffled all other attempts at cure, and can say that if, under skilful hands,

pain is elicited by the process, it is evidence of a condition of hyperæsthesia. The manipulations must, in every case, be at first extremely gentle, but it is astonishing to see the amount of force which can be used in a short time without producing any discomfort on the part of the patient.

But to return to our hypothetical case. Massage is employed twice a day. By proper kneading of the muscles and other tissues the accumulated waste materials are, in the first instance, as it were, disentangled from the cellular network among which they lie stagnant; and the continuous kneading upwards forces the exuded plasma, with the waste material it contains, from the lymph spaces into the lymph capillaries, and so on into the lymphatic vessels. At the same time the same manipulations force the venous current towards the heart, so that all the advantages of active exercise are obtained, together with absolute rest. At the same time the circulation in the various regions is stimulated, as is seen by the increased redness of the part massaged; the interchange between the blood plasma and the tissues is not only re-established, but is stimulated into a condition of activity which, I believe, is unattainable by any other means. As evidence of this we find the temperature is nearly always raised. If we take in such a case the temperature in the axilla before and about half an hour afterwards, we generally find an increase of about half a degree to a degree. In a few instances the converse is the case, and though this is looked upon by some as an unfavourable symptom, I have not always found it so. I have recently had under my care a young lady suffering from anorexia nervosa, complicated by persistent hysterical vomiting, who presented the following symptoms:—Great emaciation, waxy appearance of the skin of the face, with dark purplish red patches on the cheeks, and a bluish nose. The hands were always cold, with bluish tips and sluggish circulation. The hands and arms used to “die” every morning up to the elbows. She had been treated by tonics, change of air, &c., without the slightest benefit. During the first ten days of the massage treatment the axillary temperature after massage was almost invariably lower than before it. Nevertheless she has made a perfect recovery; she put on two stones in weight during the six weeks; and her colour is as good as could be wished. The vomiting has ceased and she eats plentifully. Her hands have resumed the normal appearance of health, are always warm, and never “die” now.

The result of the rapid interchange in the tissues is that the

nourishing plasma of the blood becomes rapidly used up. This must be replaced by nourishment. When such a case as we have been considering first comes under treatment we usually find a foul tongue, with constipation and a loathing of all food. To remedy the constipation Weir Mitchell advises the use of an aloetic pill. I prefer cascara sagrada; and although you may at first be told that the strongest purgatives are of no use, I have not yet met a case which resisted the abdominal massaging assisted by cascara. During the first few days—sometimes for the first week—I have invariably followed Weir Mitchell's advice to restrict the diet to small quantities of milk given every two hours. Usually the tongue cleans rapidly and the patient complains of being starved. The diet may then be gradually increased, until about the end of the second week, in most cases, the quantity consumed would do credit, as Playfair says, to a life-guardsmen. In a few cases I have found that the tongue refused to clean on the limited and fluid diet; a little solid food, such as an egg and toast at breakfast, and a chop in the middle of the day, has speedily brought about the desired result. I once had a case which made a great impression upon me. The patient had been a fine healthy girl, full of life and spirits, but as a result of a great deal of trouble and anxiety she broke down in health, became desponding and gloomy, and was continually "fainting." From being a girl remarkable for her powers of self-restraint, she became emotional and hysterical. Her general health suffered simultaneously. She lost her appetite, and her complexion was waxy. I began a regular course of Weir Mitchellism on her on the 15th of December, 1886, in lodgings in Dublin; but in spite of all I could do I could not get the tongue to clean, and she continually complained of pain in the epigastrium and sickness. It then occurred to me that the lodgings were in an unsanitary condition, and as she was making no progress, and as the attendance was very bad, at my suggestion she changed them, at the end of four weeks. I then began again at the beginning, and was gratified to find that in a few days the pain and sickness left her, the tongue cleaned, and at the end of six weeks, in the new lodgings, the cure was complete. The ultimate result was all that could be desired, but the treatment occupied in all ten weeks.

In this connection I will mention another case, because the President of this Section of the Academy knew something of the case and very kindly advised the girl's mother to place her under my care. She was aged seventeen, but was so emaciated that she only

weighed a little over five stones. She suffered from anorexia of the nervous type, and constipation was said to be absolute. I began the massage treatment on the 30th of November, 1886. At the end of three or four weeks the bowels acted daily without medicine of any sort, and by the end of the course she had gained over two stones in weight, her face had become rounded and healthy, the body was well nourished and plump, and the ribs, which could have been counted across a room, were hidden by the overlying fat. She has remained in perfect health ever since.

The cases I have alluded to belong to a large class which, for want of a better name, are usually called neurasthenics. We find them among both sexes, though more commonly in women. They all have certain symptoms in common, but they might well be divided into classes, according to the prominence of certain symptoms over others. Thus in the cases I have quoted anorexia and wasting were present without any defined lesion to account for the condition. In others, neuralgic pains are the prominent feature, and the relief which many of these cases experience from massage illustrates the truth of the saying of Sir Thomas Watson that neuralgia is the cry of the nerves for pure blood. Plutarch mentions how Cæsar was cured of neuralgia by rubbing. One of the worst cases of this kind which I ever had to deal with came under my care in October, 1884. The patient was a married lady, aged forty-two, with the following history, which I give in a condensed form:—Fourteen years previously she had been attacked with violent pain in the back, which was called lumbago. Four years later she had a similar attack, whilst out riding, which was so violent that she had to be lifted off her horse and left on the roadside until a carriage could be sent for her. Since that day she had always had more or less uneasiness, but it was not till 1883 that the pains returned in an aggravated form. From November, 1883, until I saw her the following October she had been obliged to stay most of her time in bed, being occasionally helped on to the sofa. The pain at first was down the course of the right sciatic nerve, but after a time she had pain also in the left leg and in her back. When I saw her first she was unable to move out of the bed without assistance; she was rather over than under nourished, but the surface was everywhere waxen in colour and appearance, she was markedly anæmic, and she presented the other usual symptoms of neurasthenia. On examination I found that the right leg when extended could not be raised off the bed more than two or three inches

without causing excruciating pain, while the left could be raised to nearly a right angle to the trunk. I have found this a most useful means of diagnosing a sciatica the result of former inflammatory mischief in the sheath from that form which seems to be a pure neuralgia. On November 1, 1884, she was placed under ether by Dr. Wallace Beatty, and I then forcibly stretched the right sciatic by Billroth's method—that is, with the foot flexed on the leg, and the leg fully extended, the thigh is flexed to about a right angle with the trunk. By this means the nerve is stretched round the great trochanter. This was followed by a most complete relief as regarded the right leg, but the neurasthenic condition continued and the ill-defined pains elsewhere were unabated. She made no progress whatever towards recovery. I then advised massage, and after some difficulty consent was obtained, and the manipulations were begun on the 13th of the following January. As advised by Weir Mitchell in fat anæmic cases, I kept her on very scanty diet—chiefly skimmed milk—for nearly three weeks, and then began to feed her up well. The treatment lasted for nearly ten weeks. At the end of it all the pains had left her, and she was able to attend to her household duties as she had not been able to do for years. She has practically been in perfect health ever since.

In October, 1887, I first saw a young lady whom I was told was suffering from the results of a sprained ankle. She had sprained it sometime in the summer and had been under treatment for it ever since. When I saw her she could not put her foot to the ground, but went about on crutches. She could not bear the slightest touch to the foot; but, after the most careful examination, I could not find anything the matter with it. At the same time I observed that she presented a well-marked series of neurasthenic symptoms—anorexia, wasting, anæmia, &c. I therefore advised general massage, which I began in the house of a friend of the patient's, which was otherwise unoccupied, and where she was completely isolated. At the end of six weeks she was allowed up and had apparently forgotten all about her crutches. The improvement in her general health was most marked, and has continued so ever since.

Another symptom, which sometimes is the prevailing one, is insomnia. Gentle massage of the spinal region, which is useful in simple cases of sleeplessness, is unavailing when the insomnia is only a complication of general neurasthenia. The most rapid and

most permanent cures in such cases are, I believe, to be found in a thorough course of massage. In 1880 I attended a clergyman who had suffered off and on for years from insomnia of an aggravated kind, accompanied by great mental depression. He had on former occasions been treated with opium and chloral, but without effect. The only thing which did him any good was going abroad. I prescribed bromides for him in various doses and in various ways—by themselves, or combined with other drugs—but they did him no good, and only increased the depression. I then tried Turkish baths, and was surprised to find that if he took a bath he usually had a good night after it. He improved very much up to a certain point, but then the baths began to lose their effect, so I advised him to go abroad. This for the time sufficiently restored him to enable him to resume his duties in the country. For several years subsequently he had returns of the depression and insomnia in a milder form, which were generally remedied by a holiday, or going abroad, or taking Turkish baths. In 1886 he again had a severe attack, for which he came to Dublin and tried the baths again, but with very little result; he returned again to the country, but got so much worse that his family were afraid of leaving him alone. I then advised a course of general massage, but with a certain amount of misgiving, as I was not sure whether his mental condition were purely functional, or whether there might not be some more serious organic mischief underlying it. Still it seemed to me at the time that to leave him in his then condition might lead to the most serious ultimate consequences, and drugs had proved more harmful than beneficial. Accordingly, I began the treatment on November 8, 1886. It was, perhaps, the most difficult and troublesome case I ever undertook. The course lasted seven weeks, and at the end of it he was so much improved that a sleepless night was exceptional. However, the benefit did not stop with the massage. I advised him to go abroad at once, which he did, but returned unexpectedly in less than a fortnight and resumed his work. A few months later I heard that he was in wonderful health and slept well. He has had no return of the attacks of insomnia and depression since; but I hear that he attributes his recovery to the foreign trip and not to the massage. A remarkable feature in this case was, that even when at other times most wakeful, he frequently fell asleep while the manipulations were going on, and sometimes slept right through the whole proceeding.

There are other conditions besides neurasthenia in which general

massage may be of the greatest use. I have tried it in different paralytic affections with varying results. I can say that I have never seen it do any harm in any of these cases; but I have had some in which I could not honestly say that it did the paralytic condition any good; but in some of the cases the result exceeded my most sanguine expectations. In acute anterior polio-myelitis the benefit to be derived from this method of treatment is fully recognised. I had one such case under my care in hospital. The child has been under the care of one of my colleagues during the acute stage of the attack, during which time he had been treated by various medicines. Owing to the absence of my colleague from town he was handed over to me. I found that he was almost completely paralysed from the neck downwards. He could not move a limb, and he could only move the head with difficulty. I had him systematically massaged twice a day, and I ultimately had the satisfaction of discharging him perfectly cured. Of course it may be said that this result might have come about without the employment of massage at all; but this expectant method of treatment most frequently fails, and, in the meantime, the occasion in which massage may do good will have passed away.

The cases, however, of infantile paralysis which have most frequently come under my notice have been cases which have existed for years—cases in which we find an undeveloped, cold, and wasted limb, a mere appendage to the rest of the body, and of not the slightest use. I have had a few such cases in which the upper extremity had suffered, and many more in which it was one of the lower limbs. What can we reasonably expect to accomplish in such a case? Cure is out of the question. Under prolonged, patient, and skilled massage I have seen the wasted muscles grow, and the limb recover somewhat of its warmth, and the flail-like condition of the extremity to a certain extent diminish; but more than this massage cannot effect.

In other paralytic and allied affections, depending on a recognised central lesion, we cannot expect to do much with massage—such as true paraplegia, hemiplegia, progressive muscular atrophy, tabes dorsalis, multiple sclerosis, and the like. But there are many cases in which the paralysis is as true as in any of the above, but in which the central lesion is uncertain. We call them functional cases until our therapeutic *repertoire* is exhausted, and then we decide that there is an organic lesion. But who can draw the sharp line dividing the one class from the other? My colleague,

Dr. Heuston, treated successfully a case by massage, in the Adelaide Hospital, which had resisted the efforts of many and eminent physicians for sixteen years. I had a somewhat similar case under my care in 1886-87. A young lady, who was staying on a visit with some friends in Cyprus in 1885, was attacked on the 19th of November with what the doctor who attended her called "malarial typhoid fever," when the temperature rose to 104° , but it subsequently rose much higher. "At the end of the sixth week," writes the doctor, "the patient suddenly collapsed, and temperature fell from 103° to 96° . She appeared to be in articulo mortis, but the pulse continued regular, though very weak; and by dint of stimulants and nourishment she rallied, but on the slightest movement or noise became insensible; heart still working regularly, but coma continuing, sometimes up to two hours, when the heart intermitted and the symptoms became alarming. From this time she had paraplegia from the hips downwards, which has continued. She made some slow improvement from this time, but one day in trying to lie on her side the legs fell out of bed and dragged her body after them. She was found in a sitting posture on the floor, and on being got into bed became comatose as usual."

She was eventually brought home in a steamer to London, and thence by sea to Dublin, being scrupulously kept in a horizontal position. I saw her for the first time after her return on the 14th of September, 1886. I then learnt that during her illness, in order to keep her alive, the foot of the bed had been raised, so as to keep the blood circulating in her brain, for six weeks. It was not till the end of this period that the paraplegia was discovered. On examination I found that both legs were paralysed completely from the hips down. She was absolutely incapable of making the slightest movement; the limbs lay like logs. Sensation was also completely destroyed in both—pins could be stuck into any part of them without her being conscious of it. Both limbs were wasted and thickly covered with hair. She was seen in consultation both by Dr. Head and Dr. Wallace Beatty. The only symptom which suggested that the paralytic condition might be functional was that the upper limit of the loss of sensation was ill-defined. We agreed that it would do no harm to try massage. Accordingly a skilled masseuse manipulated the whole body for about six weeks, and then taught the patient's sister how to do it. The latter continued to massage the limbs alone twice a day for many months. It was most interesting to watch how, after months of patient work, power

gradually returned—first in the toes, then in the foot, and finally throughout the entire of both legs. Simultaneously sensation also returned, and the hairs gradually disappeared from the surface. About twelve months after I first saw her she was able to walk across town to see me.

There are many other conditions affecting the system generally in which massage is often of great benefit, but which I cannot allude to now. But I would like to say a word about its use in gout. In elderly gentlemen, even during the acute stage, I have found it beneficial. In these cases the method must be somewhat modified. The procedure I have used when the acute stage is over is to keep the patient in bed for breakfast, shortly after which he is carefully massaged for about two hours. Then he lies quietly in bed for an hour, during which time he often sleeps. About half-past twelve or one he gets up and dresses for lunch, after which he goes out for a drive, should the weather permit, and then returns to dinner and goes to bed early. Four to six weeks of this treatment I have found in several cases has procured an immunity from a return of the disease for long intervals of time—much longer than they were previously permitted to enjoy.

If we now turn to the application of massage to surgical cases—a portion of the subject which in this Section I shall touch on but very briefly—we shall see that for the most part we have to do with local massage; we wish to bring the effect of massage to bear upon one particular part; general massage, which has such a beneficial effect on the general system, is but rarely required. As an instance, however, of a surgical case in which it may prove useful, I may mention that of a young man who came into the Adelaide Hospital with advanced disease of the knee-joint. An attempt was made to save the limb by practising an excision, but the disease returned in the ends of the bones and made such rapid progress that it became evident that the leg would have to be amputated. He was, however, in such an exhausted state from pain, discharge, and loss of appetite that I feared to expose him to the risks of amputation. It occurred to me to try the effect of massage, and that this was a case to test in practice what I believed in theory. The limb was swung in a Salter's swing, and the body was thoroughly and completely massaged for two hours a day, the diseased leg being untouched. It was very remarkable to notice the rapidity with which he gained ground. His appetite came back, his colour improved, and he began to put on flesh. As soon

as I thought he had gained sufficiently in strength I amputated his leg above the knee, and when he left hospital no one would have believed from his appearance that he had undergone so serious an operation, which, had it been attempted before massage was employed, I believe must have ended fatally.

The surgical cases in which I have employed it—and generally with remarkable results—are sprains and fractures, and with a view to preventing the re-formation of adhesions in a stiff joint in which the adhesions have been broken down.

In recent sprains and fractures we have not only to stimulate the circulation in the part and to aid the onward flow of the waste materials, but our object is to cause the absorption of extravasated blood and of inflammatory exudation. I have heard it objected that a badly sprained ankle and a recent fracture will not bear the pain of their being rubbed and manipulated. There is unquestionably rubbing and rubbing—and the difference to be found between the manipulations of a skilled hand and those of the so-called “rubbers” is as marked as between a master’s work of art and a daub of paint. My own experience of the effect of massage on sprains corroborates in every particular the description given of it by Mr. Mansell Moullin in his work on “Sprains.” “In recent cases,” he says, “the greatest care is required, and nothing is so likely to increase the mischief as rough handling of the part; but, when it is carried out quietly and gently by one who has had some experience, it is very difficult to find anything that acts in so perfect a manner. The whole limb, perhaps, is swollen, the joint distended with blood, the skin shining and tense, much too hot to the touch, and exquisitely tender—but all this vanishes as if by magic. The tension disappears as the fluid is carried off, the pain is relieved, the temperature falls, the natural outline begins to appear once more, extravasated blood is broken up, the *débris* dispersed, and adhesions between the torn and bruised surfaces effectually prevented.” In the Prussian army, where treatment by massage is in certain cases obligatory, it is found that the average duration of the disability from sprains not treated by massage is twenty-seven days; whilst when massage is resorted to it is only nine days. In fractures the results are equally surprising. The method I have employed is usually this:—The limb is placed in a splint conveniently arranged, so that with the least amount of disturbance it can be removed. The limb is massaged gently but firmly up to the seat of fracture, or near it; and from

this again up to the trunk. The parts implicated in the fracture are massaged with the greatest possible care and gentleness, and pain is rarely complained of. This is done twice a day, and occupies about twenty minutes to half an hour each time. The splints are then readjusted.

The following examples, I think, are worth recording here:—

A valet, aged thirty-two, fell on the 20th of September last and sustained a Potts' fracture of the left side. The foot was dislocated outwards and the internal lateral ligament was completely torn. He was put up by Dupuytren's method, and sent up to hospital on the 3rd of October, thirteen days after the receipt of the injury. On the 8th of October massage was begun. The swelling and ecchymosis, which had been extensive, rapidly subsided; and on the 25th of the same month he was able to put his foot to the ground and to bear some weight on the limb. On the 30th he could walk perfectly. The joint was freely movable and quite painless. He left the hospital on November 4th. In this case massage was not begun until eighteen days had elapsed, or the result might have been even more rapid; but, as it was, the complete restoration of the parts, so that he could walk painlessly and well in forty days from the time of the accident, is a result which is, I believe, unattainable by any other method of treatment.

The last case to which I shall refer is that of the boy, aged fifteen, whom I have had an opportunity of showing to the Academy. On the 16th of March last he sustained a transverse fracture of both bones of the leg by falling against a plank of wood when running. The limb was set and placed in splints by Dr. Davy, of Terenure, and the same evening he was admitted to the Adelaide Hospital. On the 17th of March I examined him and found a transverse fracture of the upper third of the left tibia. Crepitus was distinct; there was a good deal of swelling and ecchymosis, but there was little or no displacement. The leg was put into a box splint, so as to be easily exposed, and massage was begun the next day. On the 8th of April—that is, one day over three weeks—he was able to raise the leg from the bed, and when helped on to the floor could walk with assistance and with very little pain. His condition to-day—the twenty-sixth day since he broke his leg—you have been able to see and judge for yourselves.*

The length of this communication has far exceeded what I

* The patient walked into the room after the reading of the paper, without assistance, and without any appreciable limp.

originally intended. I have endeavoured to condense it as much as possible, and to quote only those cases which illustrated some special point of more than ordinary interest. I have scarcely at all referred to failures and disappointments, although I have met with such. It is hardly possible to avoid failures and errors when trying a method of treatment which is still in the infancy of its revival, and I believe I have learnt almost as much from the failures as from the successes. I may, however, say this, that the failures have chiefly been in those cases in which I tried massage as a tentative measure, and of the results of which I felt doubtful; but the number of failures has been exceedingly small. I have employed massage in sixty cases, exclusive of hospital practice. Most satisfactory results were obtained in thirty-nine—some of these being truly astonishing. In fifteen cases there was decided improvement; in three there was distinct failure; and in one the treatment was abandoned a few days after it was commenced on account of an attack of epidemic dysentery, of which the patient died. Two of the cases are too recent to classify. The three failures were—one case of true paraplegia, in which the diagnosis was doubtful; one case of progressive muscular atrophy, in which I tried it tentatively; and one case of locomotor ataxy, in which the treatment failed to do good, except to relieve constipation, with which the patient was troubled.

I think these results warrant me in saying that we have in massage a potent therapeutic agent, and one which merits well to be more universally employed.

ART. XIX.—*On the Variety and Differential Diagnosis of Primary Venereal Sores.* By J. CARTER BATTERSBY, B.A., M.B., B.Ch., Univ. Dubl.; Fellow, Royal College of Surgeons, Ireland; Clinical Medallist and Diplomate in State Medicine of Trinity College, Dublin, &c.; Surgeon, Army Medical Staff.

As the result of a large number of venereal cases which I treated and recorded in my note-book at Aldershot, the Curragh, and elsewhere, I was tempted to bring forward an elementary paper on the variety and diagnosis of venereal sores. That paper appeared in the *Lancet*, Sept. 2nd, 1882. Eight additional years of almost daily observation of these lesions have only tended (with some alterations and additions) to strengthen the opinions I then formed, and I am now prompted by these considerations—namely, the import-

ance of the subject, the pleasure of inquiry, and the advantages that result—to publish the present contribution.

That the subject is an important one few can doubt, for without an accurate practical knowledge of the variety of venereal sores, mistakes in diagnosis and prognosis must inevitably ensue. Consequently certain lesions will be treated as syphilitic where no syphilis exists, while others are regarded as of no consequence, and local remedies applied till obvious manifestations of the disease remind the surgeon of the golden moments for treatment he has permitted to pass. I believe most of the cases of advanced tertiary syphilis that come under our observation owe their origin to this cause. Either the primary lesion was overlooked or not diagnosed as syphilitic, or else treatment was too long delayed.

It is this want of accuracy in diagnosis that causes certain cases to be recorded as “soft chancre,” “ulcer of penis,” &c., when really the patient is suffering from true primary syphilis, while others are frequently shown as “syph. prim.” where no such disease exists. Hence it is not uncommon to find patients recorded as having suffered from half a dozen or more attacks of *primary syphilis*, while others bear defamatory documentary evidence of having contracted syphilis where the true affection was simple balanitis or a mere local lesion. This mistake I have witnessed more than once; therefore statistics on this subject, which ought to be most valuable, are necessarily rendered more or less inaccurate.

Although quite impossible in certain cases (a small proportion) to diagnose off-hand certain venereal sores as syphilitic or non-syphilitic, yet I hope to show how greater accuracy may be effected. With this object in view, I would divide all primary venereal sores into three classes, discarding altogether the erroneous and misleading nomenclature “hard and soft.” For do we not frequently see certain sores soft throughout their entire course followed by secondary symptoms; while others become hard and indurated by local applications, friction, &c., although no constitutional symptoms ever appear? I prefer, therefore, to classify all primary venereal sores as follows:—

- (1) Syphilitic.
- (2) Non-syphilitic venereal; and, as a hybrid of these two,
- (3) Mixed or doubtful.

Of the first class there can be little doubt about our diagnosis. For as sure as the light follows the rising sun, so surely do we see syphilis following the existence of true syphilitic lesions. The

second class is attended with considerable doubt, for no one can confidently say, until the period of incubation is accomplished, that syphilis, as a comparatively rare complication, may not follow. Hence we have a third or hybrid class in which the ulcer (owing to the shorter period of incubation) appears first as a non-syphilitic venereal, or so-called "soft sore," and after a time develops the characteristics of a true syphilitic lesion. This third class I regard as most useful, for should the surgeon have any doubt as to the true nature of the lesion he is examining, he can, as a temporary measure, classify it under this heading for observation until an accurate diagnosis be made, when it can be entered as belonging to Class I. or Class II. By such a system of elimination in doubtful cases, we could compile most trustworthy and satisfactory statistics.

That true syphilitic sores are as distinct from non-syphilitic venereal ulcers I am as convinced as that variola is not varicella, or typhoid not typhus. Each has its own period of incubation and peculiar poison, due doubtless to a demonstrable micro-organism. Recent researches on this point, although not yet completed or conclusive, throw much light on the subject. We know that Neisser, and, later, Bokai and Finkelstein, have very accurately demonstrated micrococci in the pus of gonorrhœa. Bockhart has gone further and actually produced gonorrhœa by inoculations from artificial cultivations. Aufrecht found a micrococcus in syphilitic mucous patches, forming generally dumb-bells, and staining deeply in fuchsin. Birch-Hirschfeld has confirmed this. In 1885 Lustgarten described a peculiar bacillus occurring in syphilitic products, not unlike in appearance the tubercular bacillus. De Giacomini has fully confirmed the statements of Lustgarten.

As the result of such researches, I believe the day has already dawned when, by demonstrative evidence, we can refute the now almost defunct theory of the great John Hunter, and establish beyond doubt that at least three distinct and separate venereal poisons exist, producing as they do by inoculation and absorption the three most commonly-recognised forms of venereal disease—namely, syphilis, local non-syphilitic venereal sores, and gonorrhœa.

In describing the primary syphilitic sores in Class I. I have invariably seen the following varieties:—

(1) *A sore (or sores) characterised by a cartilaginous-like induration or hardness noticeable from the beginning and throughout its entire course.*—This first variety may appear as—(a) A "cup-shaped"

cavity of variable size, having a hard indurated India-rubber-like feel when grasped between the fore-finger and thumb, and situated on an indurated base. This is the chancre described by Hunter, and still called by his name. (β) A superficial excoriation or elevated elliptical nodule of an ash-gray or livid colour, generally situated on the corona glandis. (γ) Sometimes this first variety appears as an induration beneath the true skin.

(2) *A sore (or sores) soft from the beginning and throughout its entire course.*—I have usually seen this second variety situated on the external integument, frequently on the dorsum or side of the penis. When this sore comes under our observation it is generally of two or three days' duration, is circular in form, about the size of a sixpence, edges regular and sharp, surface presenting a finely granular appearance of a yellow-pink colour, and having a thin ichorous discharge. There is no induration accompanying this sore (unless that peculiar parchment-like feel described by Ricord be termed induration), and it is invariably followed by constitutional symptoms. Again it is our lot to see a sore situated probably on the side of the corona and glans, which rapidly spreads in circumference and depth; the edges seemingly raised, the surface deep and irregular, of a dark or livid colour, and discharging a thin watery fluid. I have not been able to detect any induration about this sore, and have seen it followed by severe secondary symptoms.

Under the head of Class II. I shall endeavour to point out the non-syphilitic venereal sores, which, as such, are never followed by secondary symptoms, unless complicated as described in Class III.

(1) A sore, or sores, having a great tendency to multiply, often numbering as many as twenty, and generally situated in the hollow behind the corona glandis, on the corona, prepuce, frænum, glans, in the meatus, urethra, or on the external skin. These ulcers are first noticed from twenty-four to forty-eight hours after inoculation; in some cases, however, they may not appear until the fourth or fifth day. There is generally a good deal of heat and itching about the parts, the ulcers as a rule being round or elliptical in shape, and of variable size, very shallow, edges sharp and somewhat undermined, surface yellowish-pink colour discharging pus, and surrounded by a narrow red areola. There is no induration from the beginning or throughout the entire course of these ulcers, unless, as sometimes happens, induration occurs as the result of certain local applications.

(2) A sloughing sore which may begin as such, or appear so shortly after the ordinary sores are discovered.

(3) Gangrenous ulceration, or sloughing phagedæna, is fortunately of comparatively rare occurrence. The sore and surrounding structures become swollen and of a dark livid or black colour. Within forty-eight hours the part first attacked separates, and the necrosing action continues deeply and widely. In this way the whole thickness of the penis may sometimes be destroyed. Pain is severe, the temperature rises, the pulse becomes feeble and rapid, disinclination for food, want of sleep, great thirst and a dry brown tongue, are the chief constitutional symptoms accompanying the active stage of this severe form of ulceration.

(4) Serpiginous ulceration is seen as a slow continuous process of destruction, in which the sore extends in one direction, while it heals in another, leaving a white and adherent scar. This form of ulceration I have frequently seen on the external integument of the penis, and on the abdominal wall a little above either groin, where very often we find the whole thickness of the skin is not destroyed, but simply undermined.

Under the head of Class III. I would enter all doubtful cases, especially those occurring on the external integument, or when attended with a good deal of sloughing, which may mask but not destroy a true syphilitic sore. Also sores which, although apparently non-syphilitic, appear as single ulcers or accompanied by a second sore. I have seen such sores begin as the ordinary non-syphilitic venereal ulcer, or so-called "soft sore," and finally become indurated and followed by secondary symptoms. A beautiful illustration of this sore is well depicted in Mr. Hutchinson's "Clinical Surgery." It is exceedingly difficult, if not impossible, to diagnosticate this mixed variety in its early stage; and naturally the question may arise as to how this peculiar and comparatively rare change in the non-syphilitic ulcer takes place, and an explanation be called for. I believe it is due to the existence of a double poison manifesting itself in the one individual, contracted probably at the same time (as we know that syphilitic and non-syphilitic sores may co-exist in the same person), or at different intervals. The period of incubation of non-syphilitic sores being much shorter than that of the syphilitic, they first appear, and while being treated the incubative stage of the true syphilitic sore is accomplished, and the lesion becomes manifest. The last case which came under my observation of this mixed sore is worthy of record, as

it clearly illustrates the difficulty that attends our early diagnosis :— A corporal in the 4th Dragoon Guards was admitted to hospital under my care suffering from what appeared to be two ordinary non-syphilitic ulcers, situated on the upper surface of the glans immediately in front of the corona. The ulcers were shallow, and had all the characters of “soft sores.” After three weeks from admission to hospital both ulcers became elevated and livid, and presented the appearance of “cup-shaped” cartilaginous cavities situated on indurated bases; subsequently unmistakable secondary symptoms followed.

Ordinary non-syphilitic ulcers must not be confounded with balanitis figurata, herpes, or aphthæ of the glans and prepuce, or with a ruptured frænum, the result of mechanical violence. These, as a rule, occur very shortly after connection (or independently thereof), have no specific characters, and are usually unaccompanied by glandular or other complications.

The primary lesions I have described are for the most part found on the penis, or female genital organs. Occasionally, however, it is our lot to see them situated on other parts of the body. Such extra-genital cases of acquired syphilis are not uncommon, and are the more deplorable because they generally originate not from any fault or misconduct on the part of the attacked, but rather an innocent ignorance of the dangers to which each one is exposed on entering a public place or refreshment room, where soap, towels, glasses, pipes, &c., may be the media of transmitting the disease. Quite recently some soldiers were accidentally inoculated with syphilis while having their arms tattooed by a native Indian whose mouth on examination was found to be badly affected with syphilitic mucous patches; out of a number tattooed those cases only became affected upon whom the operator used his saliva in the furtherance of his art. The well-known dermatologist, Professor Neumann, of Vienna, has recently brought forward some statistics on this important phase of the subject. Out of 84 authentic cases which came under his observation from this presumed innocent source, he found 18 on the upper lip—6 male, 12 female—caused by drinking out of glasses that had been used by syphilitic people; twenty-eight on the under-lip—9 males, 19 females—produced mostly by kissing; twice on the cheek—1 male, 1 female; eight times on the angles of the mouth—6 males, 2 females; one case was due to smoking half a cigar commenced by a syphilitic; four times on the chin—3 male, 1 female—from shaving; three

times on tonsils in males, from use of infected spoons; twice on the alæ of the nose—1 male, 1 female—from washing in basins formerly used by syphilitic persons when the alæ were excoriated; ten on the fingers from different causes—bites, washing syphilitic clothes, &c., were the direct cause.

The accompanying table, showing the differential diagnosis between syphilitic lesions and non-syphilitic venereal ulcers will be found useful in helping us to form an early and correct diagnosis:—

Syphilitic Lesions.

(1) Incubation 10 days to 8 weeks.

(2) Collateral symptoms: probable congestion of soft palate and tonsils; slight induration of lymphatic glands in groin; drowsiness, headache, and depression of spirits.

(3) Primary lesion or lesions assume some of the varieties described under Class I.

(4) Thin ichorous discharge.

(5) Generally single.

(6) Glands in groin and elsewhere enlarge but seldom suppurate.

(7) Fever present after a short time.

(8) Ratio to non-syphilitic, 1:4.

(9) Constitutional symptoms invariably follow.

(10) The secretion from the sore is rarely inoculable on its bearer, once the glands become affected, and not at all on animals.

(11) One attack generally protects from another, unless, as in certain rare cases of small-pox, the system, after the lapse of many years, becomes liable to a second seizure.

Non-syphilitic Venereal Ulcers.

(1) Incubation 24 hours to 8 days.

(2) Collateral symptoms: probable enlargement and swelling of one lymphatic gland in groin.

(3) Ulcer or ulcers assume the characters described under Class II.

(4) Discharge always pus.

(5) Seldom seen as single ulcer, and have great tendency to multiply.

(6) Glands in groin become swollen, inflamed, glued together and to the skin, and frequently suppurate.

(7) Fever absent unless due to suppuration.

(8) Ratio to syphilitic, 4:1.

(9) Constitutional symptoms never follow, unless in mixed cases.

(10) The secretion is inoculable on its bearer, and also on animals.

(11) May suffer repeatedly from such sores.

(12) Prognosis (as to the liability of the system becoming affected) unfavourable.	(12) Prognosis (as to the liability of the system becoming affected) always favourable unless in mixed sores.
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ART. XX.—*Acute Confusional Insanity.** By CONOLLY NORMAN, Medical Superintendent, Richmond (Dublin District) Asylum.

THE form of insanity to which I wish very briefly to call attention has not, so far as I am aware, met with recognition in this country hitherto. This is not due to its rarity, however, as there can be no doubt of the truth of Salgó's dictum, that acute confusion is the most common of all forms of insanity, even though we should not accept in full the conditions which make this author's definition of the state somewhat wider than that which we ourselves admit.

If it were necessary to indicate in the shortest and most generally comprehensible way the relations of this affection to the states of alienation usually recognised under the names applied by Pinel, one would say that acute confusional insanity stood between acute mania and acute primary dementia. This statement of its position will at once show to those familiar with the treatment of early cases of insanity in the forms ordinarily met with in general practice how large are its contents, for cases occupying this intermediate ground must have struck everyone by their frequency, and by the difficulty of satisfactorily denominating them under the older headings.

Acute confusional insanity may be described as a condition of mental disturbance of comparatively rapid oncome, characterised by a dream-like engagement of consciousness, and a tendency to abundant hallucinations of one or more senses.

According as the confusion or the hallucinations predominate does any individual case resemble acute dementia or mania (melancholia). Predominance of confusion corresponds to the delusional stupor of Newington, and where hallucinations give the prevailing tone the condition is that which Mendel has named hallucinatory mania.

In average cases I have not found hallucinations of the senses so very prominent a symptom as some authorities have taught, and I

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, May 16, 1890.

am glad to find that Meynert, to whom is due the merit of having first clearly and comprehensively differentiated this state, has in his latest contribution discarded the term which he originally used, acute hallucinatory insanity (*Wahnsinn*), and has adopted the term confusion.*

The condition under consideration is almost always acute in onset; in form it is occasionally acute or peracute, more generally subacute. True chronicity can hardly be said to exist, but uncured cases lapse into secondary dementia probably earlier than cases of mania or melancholia.

The disease, when its beginning can be distinctly dated, usually makes its appearance by the occurrence of hallucination. A certain degree of dreamy obscuration of the mind has preceded this stage, as we often find from the statements of recovered patients, but this frequently escapes attention. When the condition is fully developed, consciousness is profoundly engaged. The patient has lost his sense of orientation and his knowledge of his surroundings, or, if he can be roused to correctness on those points, he soon drifts back into the obscure condition. His estimate of time is entirely confused. He dates events of yesterday as having taken place a week ago, of a week ago as being six months old, and so forth. He does not lose his sense of individual personality, or build up an organised system of delusion like the paranoiac. Varying and disconnected delusions flit through his mind, and are temporarily accepted as we accept the truth of dreams. The contents of the dream may be pleasant or the reverse; the hallucinations may seem of an agreeable character, or may be threatening and awful; and thereafter, to a large extent, follows the emotional state of the patient. I think in the majority of cases the mental contents are not decidedly tinged with either pleasure or pain, hence the emotional state is commonly indifferent; but it may exhibit considerable exaltation, or, what is much more common, considerable depression. Two features strongly distinguish the emotional condition in confusional insanity from that in mania or melancholia. First, it is variable. The patients are, as Wille briefly says, sometimes gay, sometimes sad, sometimes anxious, sometimes angry,

* I am by no means ready to say that the name I myself use, and which I have put at the head of this paper, is a very satisfactory one. Our language does not readily lend itself to minute subdivisions of mental states, either sound or morbid, and I have not ventured to dig for Greek roots, or add another to the puzzling and somewhat barbarous seven-league words of which we have in our science already a great deal too many.

sometimes tender, or all these things together, or in the most rapid succession. In short, confusion reigns in the emotional as in the intellectual sphere. Secondly, the emotional disturbance is a reactive one, arising from the nature of the hallucinations. The reverse holds good in melancholia and in mania.

The patient's acts, as well as his feelings, are dictated by hallucination. He responds to sensory hallucinations even more readily than the paranoiac, but, of course, his conduct does not so clearly exhibit his state, owing to his dreamy confusion and the varying and unsystematised nature of his hallucinations.

Episodic reactive states of emotional excitement or motor restlessness are apt to be suddenly followed by periods of increased confusion, deepening into stupor, or stuporous conditions intervening directly.

The contention of von Krafft-Ebing, that acute confusional insanity is essentially a condition of brain exhaustion, and probably due to anæmia or malnutrition of the cortex, appears to be well founded. The phenomena of the affection suggest this view, which is strictly in accordance with the histories and with the physical aspect of our cases generally. The patient is usually feeble and anæmic, and in very many instances suffers, or has recently suffered, from some exhausting disease.

This is more often than any other the form of psychical disorder which is associated with diseases not primarily affecting the nervous centres. Puerperal insanity commonly takes this form. The insanity of rheumatism is usually also acute confusional insanity. So also is the insanity that follows fevers, and it is interesting to note that occasionally the delirium of fevers passes directly into acute confusion. The latter condition, it will be observed, bears a considerable resemblance to the former. Prolonged lactation, chronic suppurative affections, diseases of the stomach and of the lungs, notably phthisis, have a strong predisposing, if not exciting, influence. Von Krafft-Ebing describes this form as occurring in cases of insanity arising in prisoners. I have seen one such case, but insane prisoners whom I have happened to see were more frequently sufferers from either acute mania or from paranoia.

I have seen several cases which appeared to be associated with nostalgia. Simple folk who had come from distant country places to a large town, became, after a short period of unrest, troubled with acute hallucinations of threatening contents, and rapidly fell into extreme confusion. It is only right to say that in some of

these cases there were bodily ailments for which the patients had to come to town for treatment, in others there was the history of a drinking bout; but in several there was neither of these factors, and the only assignable cause was nostalgia, together with unsettlement of mind and habits, produced by altered mode of life.

Acute confusional insanity, generally with hallucinations as a very marked trait, commonly occurs in cases of sexual excess or irregularity.

I have seen one very painful case in which this form of alienation followed rapidly on a painful mental shock. It is instructive to note in connection herewith that the most common form which insanity takes when it follows sudden shock is the kindred one of acute dementia.

It has for some time seemed to me a singular thing that a very well-marked form in which insanity following alcoholic excess constantly appears, has attracted so little attention. The term *mania à potû*, is used often enough, but no definite descriptive sense has been attached, and mostly people are content with the true but somewhat indefinite generalisation that it is something between *delirium tremens* and acute mania. Nevertheless, as I have been in the habit of teaching my classes for the last two years, a certain train of symptoms is almost always found in acute insanity from drink. These symptoms form an exquisite picture of acute confusional insanity. There is in a very marked degree loss of orientation, and a sort of dream-like impairment of consciousness, with numerous hallucinations. According to my observations, dreamy confusion is a more prominent symptom in female alcoholists, and hallucinations in men, but both are present in such cases in varying degrees. The association of a peculiar form of confusion with alcoholism has not altogether escaped notice. In a paper read at a meeting of the Medico-Psychological Association, at Manchester, on the 13th of March, Dr. James Ross describes an intense confusion as to dates and events as characteristic of the dementia accompanying alcoholic neuritis. In the debate arising thereon, Dr. Wigglesworth confirmed Dr. Ross's observation, and I find that Dr. Korsakoff, of Moscow, described, in 1887, in connection with alcoholic neuritis, a "form of confusion with extremely characteristic mistakes in relation to place, time, and situation."

In the last number of *Westphal's Archiv*, Korsakoff describes a number of cases presenting this particular form of confusion in a

very marked degree, associated with peripheral neuritis of non-alcoholic origin.

The course of this affection is very variable. The onset, as has been said, is often acute. I think insanity which is described by the patient's friends as having come on "out of sleep," is always of this type. In such cases a vivid dream appears to be accepted as true and followed by a brisk reaction. Thus acute confusional insanity is brought into line with that state occasionally present in the sane, and especially in those of neurotic tendency and in epileptics, which has been called *Schlafkrankheit* by German authors. The duration may be very short, lasting only a few days, or even, in abortive cases, only a few hours—*e.g.*, some cases associated with menstrual disturbance, as von Krafft-Ebing correctly points out. The last-named writer calculates his recoveries as amounting to about 70 per cent. Cases that are about to recover occasionally pass into a state resembling acute mania. Meynert, who first observed this occurrence, thinks that the functional hyperæmia accompanying the maniacal attack brings about a tendency to cure by increasing the circulation of blood through the exhausted brain. More common as an indication of recovery is a slight degree of stupor resembling that through which the patient, convalescing from an attack of acute mania, so generally passes. Prolonged periods of stupor, resembling and probably identical with that occurring in acute dementia, occasionally precede recovery. Less favourable signs are a mixture of maniacal and stuporous conditions, or a tendency towards pathetic and histrionic displays, or the occurrence of pseudo-tetanic or pseudo-cataleptic states. The latter symptoms, when accompanied by verbigeration, constitute a close approximation to katatonia, which is indeed probably only to be regarded as a variety of the general affection under consideration. As in all cases of acute insanity, death from exhaustion may occur in an early stage, and there is in the usually debilitated sufferers from this disease a special tendency to succumb to intercurrent affections.

The diagnosis of acute confusional insanity lies in the distinctions to be found between this state and the allied conditions of acute mania, acute melancholia, and acute dementia; also certain forms of paranoia. From acute mania it is distinguished by the absence of exaltation and of increased rapidity of thought and association. I am not inclined to go with Salgó and say that any case in which hallucinations occur must be rejected from the

denomination of mania, though hallucinations are much more characteristic of the affection under consideration. True emotional depression as a primary symptom is absent in acute confusion, whereby the latter is distinguished from melancholia. It is very intimately associated with acute dementia, and it is not always possible to say which form we are dealing with, though the presence of hallucinations and the absence of complete stupor in a typical case of acute confusion sufficiently denote the ailment.

From paranoia it is distinguished by the want of systematisation in delusion, by the existence of confusion, and by the sudden mode of oncome.

The following are brief abstracts of some cases which have occurred in my practice chiefly within the last two or three years, and I have selected them because they are typical of a number of similar cases noted within the same period:—

CASE I.—*Acute Confusion, associated with Alcoholic Excess ; Neuritic Pains ; Recovery.*—X. Y., female, aged about forty ; widow of a merchant-tailor ; hereditary history could not be ascertained ; a sister is an habitual drunkard. Patient was supposed not to be of as high a social rank as her husband, consequently his friends would not know her, and she led rather a solitary life. Drank steadily, at first on the sly, afterwards more unrestrainedly. In the year 1884 had an attack of insanity, said to be brought on by drink. Admitted under my care, December 28th, 1888, four or five days after her husband's death. On admission she presented the ordinary appearance of the alcoholicist—a bloated, swollen-looking face, darkly flushed, with greasy skin, staring eyes, injected conjunctivæ, and a tremulous, jerky, coated tongue ; general shakiness, of the *delirium tremens* type ; manner dazed ; she seemed to make an effort to rouse herself to reply to questions, and talked slowly, and with much confusion ; she talked of her husband's long illness, which she could neither date nor describe ; spoke vaguely of continual quarrels with his nurse and his relations, but could give no details, or confused different individuals and different times in a way that made the story entirely unintelligible ; she confused the dates of her husband's death and funeral ; sometimes she said he died last Monday and was buried on Thursday, sometimes he died the previous Thursday and was buried last Monday ; one event occurred on a Monday and one on a Thursday, but which on which day she could not be sure.

December 30.—Told my colleague (Dr. Cope) that she saw her sister, and heard her voice asking for the children. This troubled her, for she thought her sister was dead. Dull, dazed, sluggish, silent, unless when

spoken to. Complained of pains shooting through extremities, particularly backs of hands and feet.

January 3.—Called the charge nurse "Mrs. B." (her husband's nurse), and asked her for "the keys" to get some whisky from the cupboard. When she was questioned about this she called the nurse by the proper name, and knew where she was; but again, after a while, called her Mrs. B., and spoke to her as if she was at home.

January 5.—Told Dr. Cope that her younger son, Tom, ten years old, slept in her bed last night; he was ill and restless. Later on she told me this must have been a dream.

January 7.—Sluggish, dreamy, and unintelligent; *sure* both her little boys are dead; pains shooting down her arms and legs, and constantly present in dorsal surfaces of hands and feet; knee jerk equal, diminished; all the muscles flabby and feeble; no distinct paralysis; no drop wrist or drop ankle.

January 21.—"Gaining intelligence of manner and expression; still puzzling about her children and sister whether they are living or dead (as a matter of fact they are all alive)."

From date of last note there was steady improvement. Her recollection of the events preceding admission remained vague, summary, and confused, but she was conscious of this confusion. She stated that her previous illness had been exactly of the same character. She continued to suffer from pains—vague, shifting, darting pains—as if in the bones or deep in the muscles, chiefly in legs and forearms, and especially hands and feet. Discharged, recovered, April 3, 1889.

CASE II.—*Acute Hallucinatory Confusion associated with Alcoholic Excess; Epileptiform Seizures; Recovery.*—The above is an extremely typical case of alcoholism in a woman. While she was under treatment an almost identical case was admitted into the Asylum. The details are so similar that I need not trouble you by entering into them. A woman of nearly forty, mother of two children, had a strong hereditary tendency to drink, to which she had entirely given way. She was deserted by her husband, and lived with relations who were always drunk. Had suffered from occasional epileptic fits. When admitted (February 20, 1889) she presented all the appearances of recent hard drinking; next morning she had two epileptic or epileptiform seizures; mentally she presented a state of confusion such as I have above described; she was slow and dreamy in conversation; could be roused to comparative clearness, but soon became confused again; thus she mistook me for the doctor who had been attending her in a suburb; the error was pointed out; she acknowledged it, but in talking to me drifted into references to my previous visits to her, and so forth, showing that the confusion persisted. After initial restlessness of the *delirium tremens* type had passed off she became

sluggish. Four days after admission she rushed, shrieking, to a window, and broke several panes of glass. When I asked her next day how her wrists were cut, she replied that she had been in the waiting room at a railway station, and that two men in green velvet had seized her, and would have robbed her but that she broke a window and attracted notice. She pointed out the nurses who brought her from the window as a woman and a policeman who had come to her rescue. About four and twenty hours later, when reminded of these statements, she said that she must have been dreaming, that she remembered these things as one recalls a dream. After this she made rapid progress to recovery, and was removed by her friends, apparently quite cured, March 8.

CASE III.—*Acute Hallucinatory Confusion associated with Alcoholic Excess, &c.*—I have at present under treatment a young woman, twenty years of age, married a year and a half, brought up by drunken relatives, who deny hereditary taint, and state that the patient drank to excess since her marriage, but not before; childbirth six months before admission; child suckled for four months; menstruation has not returned. Fourteen days before admission, patient went to England with her husband, an artisan, who was looking for work; six days later was brought back to Dublin in a state of mental disturbance. When admitted she was extremely anæmic, though without other distinct sign of physical disease; she did not know the day of the week or the month, nor where she was; said she was not married, and never had a child, and always gave her maiden appellation when asked her name; when one spoke to her of her husband she looked blank, and did not seem to understand; when one mentioned his name, Thomas E., she said, "Is that old Tom E. that lived next door?" She was confused, but quite calm, without trace of either exaltation or depression. One dark night, about 12 o'clock, she got up, and broke the window of her bedroom. On inquiry, she stated that she did this because she saw another old neighbour of hers, "Lame M.," walking past, and wanted to attract his notice.

CASE IV.—*Confusion in the special form described by Ross and Wigglesworth occurring in a Toper; Passage into Secondary Dementia.*—G. B., male, aged sixty, railway policeman; hereditary history unknown; for many years of intemperate habits. Admitted October 1, 1886; a feeble anæmic old man; expression satisfied and not at all unintelligent; he answered questions briskly and without hesitation, but with an absence of orientation that was most striking. Weeks after admission he had no notion where he was; he seemed to have some vague thought that he was in some institution, for he usually replied promptly to the inquiry where was he—"Meath Hospital," "Limerick Workhouse," "Cork Infirmary," or some such name, generally giving a different one each time.

He commonly accounted for the fact that he was lying in bed or sitting at the chimney-corner by saying, "It is Sunday, and you know one can't do anything to day;" but asked where he was the day before he always told a glib story, with all the appearance of conviction—that he had been at some place, perhaps 250 miles away, attending to his work, or the like. The story was quite different at different times in the same day; but it was always ready, coherent *per se*, and improbable only because of the confusion of time and place. He denied that he slept, and usually laughed at the suggestion. "I was away last night on the railway between Sligo and Collooney watching for the rascals who put stones on the line." He nearly always told one that he had spent the previous night at the other side of the island. He was reported to sleep fairly. The waking sense of occupation at night probably corresponded to an active dream state, or may have been merely a reminiscence of former habits of life.

This patient has not recovered. His striking symptoms have become less marked, and he has fallen into a state of general dementia.

CASE V,—*Acute Hallucinatory Confusion resembling Paranoia, associated with Alcoholic Excess; Recovery.*—R. U., male, aged thirty, publican. Admitted March 4, 1889, presenting the ordinary signs of drinking; bloated, greasy, flushed face; full staring injected eyes; tongue thickly coated, white, tremulous; pulse bounding; profuse sweating; strong sweetish odour from breath; general tremor and restlessness; no sleep. For the first three days the case was hardly to be distinguished from ordinary *delirium tremens*; afterwards, in addition to confusion similar to that described in the two first cases, there were hallucinations leading to delusions of a somewhat persecutory type, and these did not pass away as quickly as the associated confusion. Thus, he had heard people talking about him lately, saying he had given information to the police, and must be done away with. He told me definitely that he heard this said twice in his back yard, though he did not know by whom, and he concluded there was a conspiracy against him; but to my colleague, Dr. Nolan, who made some notes of his case, he stated that he saw two men in his yard, and knew what they said, though he did not hear them. Thus, he seems to have had hallucinations both of hearing and vision. He admitted that for some months before the appearance of hallucinations he was nervous and easily startled; the least excitement caused a sense of fluxion to the head, with distressing feeling of confusion. He made an early and good recovery; but has since been again under treatment for a similar attack, in which confusion was less marked, while hallucinations were more prominent.

It must be said that a case like this has a strong resemblance to paranoia; it has not, however, the bad prognostic import of that affection.

Before I recognised the form under review, I used to teach that paranoia alcoholica is the only form of paranoia in which recovery may be expected.

CASE VI.—*Acute Hallucinatory Confusion simulating Paranoia, following Acute Rheumatism and perhaps associated with Nostalgia.*—D. W. J., male, aged about twenty-five; hereditary taint denied. He was a shop-boy in a remote country village; had always been healthy till November, 1888, when he got rheumatic fever; confined to bed for two months; still very ill and weak for six or seven weeks; as soon as he could travel, came to Dublin for a change (March 15, 1889); felt timid and confused; could not sleep; thought the folks in the hotel looked suspiciously at him, consequently he spent most of the day walking in the street; there he used to suffer from sudden paroxysms of dread (agoraphobia). When admitted to the Asylum, March 28, he could tell little or nothing of what had really happened since he came to Dublin; he did not know the day of the month or week; he was exceedingly confused, and a little incoherent; at first, rather suspicious; he soon became communicative and told a confused story of people coming nightly into his room to murder him, talking about him, pointing at him in the street, and so forth; to escape, he had fled from his hotel the previous night and taken up his quarters in a low lodging-house; here he had hardly got into bed when he heard people at the door sharpening knives and preparing to murder him; in an agony of apprehension he threw himself out of the window, and, in spite of a badly-sprained ankle, ran violently through the streets till he was arrested. This patient was removed from the Asylum by his friends after a few days, so that the sequel is unknown.

CASE VII.—*Hallucinatory Confusion associated with Phthisis.*—B. D., male, aged twenty-one, a clerk, whose sister died of consumption, but whose family history was otherwise good, was admitted to the Richmond Asylum on April 11, 1889, suffering from pulmonary trouble, of three months duration, which had already produced excavation, and marked hectic. He remained in the Asylum eleven days, and was then removed by his friends to die at home. On admission, he said he had been annoyed for the last six weeks by hearing his thoughts spoken, which, he used to think, was done by someone to annoy him; but he now believed this notion was merely fanciful; by day, save in the early morning, he was lucid, but at night he was a prey to horrible hallucinations and dreads; thought he heard a sawing going on constantly, which was some one performing a terrible operation upon him; thought sometimes he was suffocated with silica; sometimes that he was dead; instead of sleep, he said a terrible mental confusion came over him in which he could not distinguish true from false. Dr. Nolan made this note:—"April 20—Every

morning is in a confused state, talking of the horrors of the previous night incredulously, and yet as if apprehending some danger." The analogy of this poor fellow's condition to ordinary feverish delirium need not be pointed out.

CASE VIII.—*Acute Hallucinatory Confusion, dependent perhaps upon Nostalgia ; Passage into Dementia.*—M. J., female, single, aged fifty, of peasant class ; admitted to Richmond Asylum, March 21, 1889. She had been arrested for wandering in the street ; she rented a small farm in the County Armagh, and came to Dublin to see her landlord's lawyer. For no apparent cause she conceived that all the folk in the inn at which she stayed had been boycotted ; she knew it by their strange look ; she also heard people at the street-corners talking of it, and saying she was boycotted and would have to die ; she became so frightened that she wandered away. She was tolerably lucid on the 21st and 22nd, and seemed to be getting over her terrors.

March 23.—When awakened, said she was dying and could not walk ; she lay all day in a state resembling hysterical coma or acute dementia, quite motionless and without response ; not resisting ; keeping the eyes closed ; eyelids tremulous.

"March 24.—Saw black men in the room with her last night ; fears they will murder her."

After this she became very incoherent and confused ; now and again complained of visions of black men ; was occasionally very irritable, and sometimes exhibited maniacal outbursts.

She has not recovered, but has gradually passed into a state of chronic weak-mindedness which does not offer much hope of cure.

This case also appeared somewhat like paranoia at first, but the appearance of fresh hallucinations and unsystematised delusions gives the clue to the true nature of the case.

CASE IX.—*Acute Hallucinatory Confusion, beginning in a dream ; Apparent cause Sexual Irregularity.*—N. E., male, aged 33, single, book-maker ; hereditary taint denied ; said to have been always temperate, but of rather nervous habit.

As a boy he indulged in excessive masturbation ; later on suffered from frequent seminal emissions ; consequent uneasiness ; passed through the hands of a number of quacks ; read their literature, and believed himself impotent ; tried connection ; failed ; was more unhappy than ever ; mind filled with constant thoughts about, and sensations connected with the genitalia. Examining him, when convalescent, one found that the prepuce was rather tight, and that there was undue sensitiveness about the parts ; examination producing evident excitement.

Was in his usual health on May 31, 1889. On that evening he was vexed by his mother asking him some question connected with money,

which he thought implied that he was gambling; went to bed at his usual hour and slept till 2 a.m., when he dreamed of the devil, and, awaking, thought he was in the room; he ran down stairs and into the street in his shirt; brought back and put to bed; slept; when his mother came to wake him late in the morning he took her for the devil and attacked her. His subsequent recollection failed at this point—fights, devils, policemen, vaguely remembered in a cloudy way.

June 3.—Admitted to Asylum; his friends said he had complained of headache for some days past; he was silent, violently resistive, feverish. (Evening temp. 103°).

June 4.—Lay silent in bed, with fixed staring eyes; body to same degree rigid; rigidity easily overcome; no *flexibilitas cerea*; would not take food voluntarily, but swallowed what was put in his mouth. (Temp. normal). Spoken to loudly, and shaken up, he said, in a clear, loud, monotonous, absent voice—"I am with the Lord."

June 5.—No rigidity; said nothing, save "I am with the Lord;" began to take food; left to himself; lay motionless, apparently in an ecstatic state; wet and dirty.

June 6.—Dull, exhausted, and dazed; did not know where he was, but made an attempt to discriminate individuals, calling me "sir" for instance.

June 9.—Rapid improvement; was able on this day to give the previous history recounted above, which so far as it could be tested proved perfectly accurate.

June 24.—Discharged recovered; no relapse.

The above cases are selected as examples of common forms of this affection. An interesting case of alcoholic neuritis with mental disturbance, mistaken at first for an aberrant form of general paralysis, would lead us too far afield. So would a description of even one of several cases approaching to katatonia, with their varying symptoms. "Nostalgic" cases generally run a speedy and favourable course. There are often three or four recent examples in my asylum at the same time.

In conclusion, I have only to say that I do not wish to be understood as setting up acute confusional insanity as a distinct disease. My object has rather been to point out that among the various modes in which acute insanity shows itself there is, in addition to the long-recognised forms of mania, melancholia, and acute dementia, a pretty definite type characterised by confusion with hallucinations. If this type is frequently recognisable, if it is found to occur in connection with definite ætiological moments, if it has anything like a distinct course, if it offers any special

indications for treatment, if it can be held to have any particular prognostic significance, then it is distinctly worth while to study its clinical peculiarities and to differentiate it from other forms of mental disturbance, even though one should not esteem it a distinct disease, and although we are quite ignorant of its "pathology" (to give that word the limited sense in which it is commonly used in this place).

ART. XXI.—*Medico-Statistical History of the Army of Occupation in Egypt, 1882-87 inclusive.* By BRIGADE-SURGEON ALBERT A. GORE, M.D.; Army Medical Staff.

(Continued from page 422.)

WHILE these military operations were being carried on in the Eastern Soudan, the Nile Expeditionary Force for the relief of General Gordon was being organised and pushed forwards towards Khartoum from March 18, 1884, to July 31, 1885, when the last detachment not forming the permanent garrison of the Soudan reached Wady-Halfa. In September, 1884, Lord Wolseley and Staff proceeded up the river, at which date Assiout, Assouan, and Wady-Halfa was already in occupation of an advance party. The medical arrangements were under the supervision of Surgeon-General John O'Nial, C.B., Principal Medical Officer. Along this historic Valley of the Nile many ancient armies had proceeded in the vain attempt to penetrate into Ethiopia and the Lybian desert. B.C. 594, Battus III., of Cyrenaica, supported by some auxiliary Greeks, extended his conquests in this direction, but failed to drive the inhabitants from their native country. The Persians under Cambyses were buried in great numbers under the whirlwinds of sand—the terror of travellers—and suffered such unspeakable hardships from hunger and thirst that they were obliged to return. B.C. 336, Alexander entering Egypt from Palestine *via* Gaza and Pelusium, finally marched to Memphis, but did not himself attempt to penetrate these inhospitable deserts. It remained to his lieutenant, Appollonidas, to march from Memphis to Elephantine, and master the whole valley below the Cataracts. A.D. 68, the Roman General, Ælius Gallus, marched into Ethiopia with an army of 10,000 men from Pselcis across the desert to Premis, 250 miles on the northerly bend of the river, made himself master of the capital, Napata, but did not attempt to hold the country, contenting himself with leaving a

garrison at Syene or Assouan to stop the Ethiopians entering Egypt, the Roman territory ending at Hiera, 12 schoeni, or 70 miles beyond where, later in the reign of Domitian, the poet Juvenal commanded 3 cohorts at Syene, Philæ, and Elephantine. Of the then normal garrison of 2 legions in Egypt, 4 in Syria, under Mucianus, and 3 under Vespasian carrying on the memorable war against the Jews, the power of Rome was felt 100 miles beyond Assouan only. The last serious expedition of the Romans to the frontier (A.D. 300), under Diocletian, found the revenues of Ethiopia less than the cost of the troops required to collect them. No serious attempt was made to penetrate these regions by Europeans until Dessaix, ordered by Napoleon to follow the army of Murad Bey into Upper Egypt, set out on 26th of August, 1800, with his division of 3,500 men on his toilsome march to Assouan, arriving at Elephantine after numerous delays on February 4th, beyond which he did not attempt to extend his journey—his troops exhausted by fatigue, almost without provisions or ammunition, their clothes worn, and themselves almost blinded by ophthalmia, without medicines or instruments, and harrassed by a hostile population. Just three-quarters of a century later, an estimated strength of British soldiers, 10,771—composed of 3 camel corps, 19th and 20th Hussars, R. A., R. E., 9 battalions of infantry and detachments of 2 Transport, Mounted Infantry, C. and T. Corps, O. S. Corps, M. S. Corps—accomplished a journey which no European troops have hitherto performed.

Of the foregoing, the 1st Yorks at Assouan; the Cameronian Highlanders, at Korosko; and detachment 2nd Essex, at Assiout, formed the permanent garrison of these places. The expedition ultimately extended from Merawi to Cairo, a distance of 1,700 miles by river. 8,953 men were admitted to hospital, 557 died, and 630 were invalided, giving the following ratio per 1,000 of strength:—

Admissions	Deaths	Invalids
831·21	51·71	58·49

Of the deaths, 389 were due to disease, 38 to accident, 84 were killed in action, and 42 died of their wounds. The principal diseases were as below:—

	Admissions	Deaths	Invalids
Febrile Group	- 2,514	288	108
Constitutional	783	4	28
Digestive	- 2,402	72	165

*Average Strength, Admissions, Deaths, and Invaliding—Nile
Expeditionary Force—March 18th, 1884, to July 31st, 1885.*

NON-COMMISSIONED OFFICERS AND PRIVATES.

	Admitted	Died	Invalided
<i>Class I.—General Diseases.—Febrile Group.</i>			
Small-pox	41	5	—
Other Eruptive Fevers	6	0	—
Enteric	760	277	63
Simple Continued	1,635	6	40
Paroxysmal	40	—	5
Other Diseases	11	—	—
<i>Constitutional Group.</i>			
Rheumatism	160	—	10
Primary Syphilis	429	—	—
Secondary „	164	—	8
Tubercular Diseases	21	4	7
Scurvy and Purpura	8	—	2
Other Diseases	1	—	1
<i>Class II.—Local Diseases.—</i>			
Nervous System	143	15	22
Eye	511	—	7
Ear	41	—	3
Nose	—	—	—
Circulatory	50	1	19
Absorbent	45	—	1
Ductless Glands	—	—	—
Respiratory System	196	9	8
Digestive	2,420	72	165
Urinary { Gonorrhœa	197	—	—
{ Sequelæ of	57	—	—
{ Other Diseases	39	—	—
Generative System	60	—	—
Organs of Locomotion	43	—	3
Cellular Tissue	397	—	8
Cutaneous System	367	—	6
<i>Class III.—Debility</i>	464	—	170
<i>Class IV.—Poisons</i>	10	1	—
<i>Class V.—General Injuries</i>	—	37	—
Local	384	2	8
In action	241	126	74
No Appreciable Disease	19	—	—
General total	8,953	557	630

Average strength, 10,771; admitted, 8,953; died, 557; invalided, 630. Ratio per 1,000, 831·2, 51·71, 58·49. Officers—

average strength, 600; admitted, 514; died, 41; invalided, 105. Ratio per 1,000, 836·6, 68·33 and 175·0—all in excess of the non-commissioned officers and men.

The boats built for the expedition were of an average weight of 1,000 lbs. They each contained a crew of 12 men, and 150 days' supplies. The "stern wheelers" had a towing power of 20 tons; speed, 8 or 9 knots; carrying tonnage, 25 to 40 tons. The ordinary nugger, the great cargo boat chiefly used above the second cataract, carried about 20 tons. In the management of these the Dongolese were especially expert. The following liberal ration was issued to each man on the Nile boats:—

Preserved Corned Meat	-	1 lb., 4 days out of 6
Fresh - -	-	1 lb., 1 day out of 6
Boiled Tinned Mutton	-	1 lb., 1 day out of 6
Bacon - -	-	1 lb., 1 day out of 6
Cheese - -	-	$\frac{3}{4}$ oz.
Biscuit, Navy -	-	1 lb., 5 days out of 6
Flour - -	-	1 lb., 1 day out of 6
Pickles - -	-	$\frac{1}{2}$ oz., 4 days out of 6
Jam or Marmalade -	-	$1\frac{1}{8}$ oz., 1 day out of 6
Tea - -	-	1 oz.
Sugar - -	-	3 oz.
Salt - -	-	$\frac{1}{4}$ oz.
Preserved Vegetables	-	1 oz.
Lime-juice - -	-	$\frac{1}{8}\frac{1}{20}$ gallon
Erbswurst - -	-	1 ration every third day
Cocoa and Milk -	-	Extra for occasional use
Vinegar - -	-	$12\frac{1}{80}$ gallon
Rice - -	-	$\frac{1}{2}$ oz.
Oatmeal - -	-	$\frac{1}{2}$ oz.
Pepper - -	-	$\frac{1}{88}$ oz.

Tobacco on payment at 1s. 4d. lb.; common soap, on payment $\frac{1}{2}$ d. a piece.

The field hospital supply case contained—3 bottles of brandy, 2 bottles port wine, 12 4-oz. tins Liebig's extractum carnis, 2 lbs. mustard in tins, 1 lb. yellow soap in tins, 1 lb. candles in tins, 1 tin alum, 2 lb. arrowroot, $\frac{1}{4}$ lb. salt in tin box, 4 tins condensed milk, 2 boxes safety matches, $\frac{1}{2}$ lb. compressed tea, 1 corkscrew, 1 opening knife, 1 bottle of permanganate.

In the stationary camps the following scale of rations was issued to the troops:—

Fresh beef with bone, 6 days a week	-	-	-	20 oz.
Tinned beef, 1 day a week	-	-	-	16 oz.
Bread, daily	-	-	-	20 oz.
Potatoes, daily	-	-	-	16 oz.
Salt, daily	-	-	-	$\frac{1}{2}$ oz.
Coffee	-	-	-	$\frac{1}{2}$ oz.
Lime-juice, daily	-	-	-	$\frac{1}{2}$ oz. to 1 oz.
Pepper, daily	-	-	-	$\frac{1}{8}$ oz.
Wood, daily	-	-	-	3 lbs.
Rum, thrice weekly	-	-	-	2 $\frac{1}{2}$ oz.
Sugar, daily	-	-	-	2 $\frac{1}{2}$ oz.
Tea, daily	-	-	-	$\frac{1}{2}$ oz.

Notwithstanding this liberal scale of diet, the men bought large quantities of biscuit in the canteens. The sale of liquors was prohibited, and beer was too expensive to buy. The troops lived in double mountain Indian service tents, six men in each. The latrines were the usual field trenches to leeward. Water was obtained from the Nile; but, owing to the scarcity of fuel, could not be boiled. From June to September, during the rise of the river, it was turbid, and when filtered of its coarse impurities still contained a considerable amount of chlorides, and both lime and magnesia carbonates. The water was pumped from mid-stream by means of a tube suspended from an anchored buoy, and afterwards passed through native zeers, through which the water oozed, and on the large surface was thoroughly exposed to the action of the air. In this way the muddiest water became perfectly clarified, but was exposed to dust containing or not morbid germs.

All non-commissioned officers and men were specially examined as to their fitness for service in Upper Egypt 48 hours before departure, and all under 20 years of age were excluded. Each was supplied with 1 pair of goggles, 1 helmet curtain, 1 gauze veil, 1 back pad, 1 clasp knife and lanyard, 1 skin hand-guard for rifle, 2 blankets, 1 pair of putties, 1 woollen night-cap, a seaman's thick blue knitted jersey, 2 cholera belts, a waterproof sheet. The following articles of clothing and equipment being taken on the person—viz., 1 khahee, or serge frock; 1 khahee, or serge trousers; 1 flannel shirt, 1 pair of boots, 1 flannel belt, 1 pair of socks, 1 pair of braces, 1 helmet, 20 rounds of ball ammunition, haversack,

water bottle, mess tin. In valise—1 flannel shirt, 1 flannel belt, 2 pair boot-laces, 1 hold-all, complete; 2 pair of socks, 1 towel, 1 pocket ledger, 1 pair boots, 1 piece of soap, 1 brush, 1 box grease, 1 housewife, 1 new first field dressing, 1 oil bottle, 1 Glengarry cap, 1 great coat. A reserve of these articles were carried regimentally. Some of the regiments slept in the open in the desert with their clothes and accoutrements on, and were exceptionally healthy. The duties, when not on the march, were those of fatigue and building forts and barracks of large blocks of dried mud taken from native huts.

The prevailing wind was almost due north, and blew with great force almost unremittingly during the year. It was extremely dry and, as a rule, cold, with a high degree of electric tension. The desert was almost entirely devoid of vegetation, except a few prickly acacias and tamarisk bushes at the bottom of the wadys, or old dry water-courses. On the elevated strip on the river bank the vegetable products consisted of dates, dhurra wheat, peas, beans, lubin, a few pumpkins, fringed here and there with date palms. This strip of cultivation, when present, averaged about 200 yards in width, the land consisting of recent Nile deposit. The hills were composed of alluvial deposit, mixed with the *debris* of basalt, quartz, Nubian sandstone, fresh water shells, plants, &c. Some fossilised remains of the elephant and hippopotamus were found. The temperature was extremely variable. During the summer, 120° Fahr. in the shade was not uncommon; but the nights were almost invariably cool. Besides the diurnal changes, the temperature varied greatly during each month. Intermittent fever was unknown. Conjunctivitis was the most common complaint amongst the natives.

1. Cairo to Assiout, 254 miles by rail.
2. Assiout to Assouan, 344 miles by river steamer or steamer towing barges.
3. Assouan to Philæ, 9 miles round cataract by train.
4. Philæ to Wady Halfa, 240 miles by river, by small steamers towing boats.
5. Wady Halfa to Dongola, 202 miles by boats, sailing or rowing, by river and by canals. Between Wady Halfa and Dongola stretches of river, broken by cataracts and rapids, impassable except at "High Nile."
6. Dongola to Ambugol, 100 miles.
7. Ambugol to Shendy, 100 miles across desert.

During the long line of 1,700 miles the stations at which medical and surgical aid was provided were Dal, Abri, Kaiban, Shaban, Abu-Fatmeh, Dongola, Handuck, Abu-gus, Debbah, Kurot, Tani, El Gubet, or Metemneh, Gakdool, Abu-Klea, El Howyicat (desert post), Korti, Merawie, Akasheh, Ambigole, Semneh, Sarras. Wady Halfa, Korosko, Shelal, Assouan, Assiout, Cairo, with disembarking bases at Suez and Alexandria, where was the Nile reserve depot for equipping all drafts and receiving weakly men unfit to proceed. All invalids were sent to the citadel hospital, Cairo, in the first instance. All convoys of sick, numbering 20 or more men, never had less than 2 non-commissioned officers with them, the medical officer classing the invalids into "helpless" and "helpful," the former being placed in special charge of hospital orderlies.

In water transport of invalids, two classes of boats were employed—the large flat-bottomed nuggers and "whalers." Each of the former carried 25 sick, provided with bedsteads (charpoys), filters, cooking places, awnings, and other necessities. They continued to run while the wind was favourable. The "whalers" or Nile boats carried six or seven "sitting-up cases," or two stretcher and two "sitting-up cases." Six Egyptians or Dongolese formed the crew, and there was a private M. S. C. in each boat to attend to serious cases. Before being placed in the boats in the early morning the party had tea, bread, cocoa, and milk; their kits, arms, accoutrements, and provisions went with them, all medical requisites and medical comforts. About one p.m. the convoy hauled up by the river bank, selecting a shady place; fires were lighted, and a warm meal prepared and issued, and patients and wounds attended to. They afterwards proceeded, and towards evening put up at a suitable rest camp, in which they passed the night. The serious cases were provided with lying-down accommodation, on stretchers made comfortable with air pillows, folded blankets, mattresses, bolsters, &c. Each boat was provided with an awning. On the return journey, when the regiments were marching, they did so along the river bank, beginning at sundown, halting about midnight, when hot cocoa and milk was served out. On reaching their new ground, early next morning, they rested there during the day. None but healthy men were allowed to march, and few fell out. Each party was accompanied by a medical officer, with field panniers or field companions. The hospitals ranged in accommodation, as a rule, from 20 to 200 beds, according to the requirements of each station, in E. P. tents,

accommodating 8 patients each, or huts of matting of dhurra straw, each 22 ft. × 16 ft. × 9 ft.; a door at either end, with a movable mat in front; roofs of double matting, in hot weather supplemented inside by blankets. Each hut held 10 to 12 sick; they were cool, clean well ventilated, and antiseptic. In all cases of small-pox there were some marks of vaccination. The percentage of deaths to cases treated in enteric cases was 36·44, as compared with 15 to 25 in civil life, but many cases of a mild type escaped under other denominations. The ages of the men attacked in 528 cases were as below :—

Under 20	20 to 24	25 to 29	30 to 34	35 to 39	40 and upwards
15	378	115	12	7	1

At Wady Halfa, where there were 178 admissions and 47 deaths, the medical officer reported—"The camps themselves are clean, but the ground is very foul in consequence of the Egyptians defecating all over the place." At Assouan, in December, the S. M. Officer wrote—"Water supply not good, as we are about 300 yards below the fort occupied by 200 Bashi-Bazouks, and numerous women and children. Foreshore in front of fort in a very unsanitary condition. The goats could not be milked at camp or hospital, and the milk had to be taken from the natives on their own terms; the liability to contamination was therefore great. The following was a typical *post-mortem* appearance in a bad case of the disease, as seen "Up Nile":—"Ulceration of Peyer's patches; lower part of small intestine inflamed and softened; mesenteric glands greatly enlarged; large intestine semi-gangrenous in parts; congestion of lungs; friable spleen." The high rate of mortality was attributed to many avoiding reporting sick in the early stage, in the keen desire to go forward when treatment was most likely to prove beneficial, frequent movement for military and unavoidable reasons, and the nervous exhaustion due to the heat conditions surrounding the patients, the temperature in the huts in which some were treated reaching to 112° Fahr. "It was not the enteric which killed them, it was the heat." The simple continued fevers were due mostly to solar exposure on days when there was an absence of wind, and consequently stagnation of air, especially in June; debility often followed. The comparative freedom from syphilis was partly due to absence of facilities for intercourse and drunkenness, and partly to careful inspection of the troops prior to proceeding "Up Nile."

From the beginning to the end of the campaign there were only

5 cases of scurvy—46 per 1,000. A slight scorbutic taint was observed among the men at Kurot and Abu-Fatmeh, but promptly met by an increase in the lime-juice ration and additional vegetables. The blacks in Egypt are stated to be naturally predisposed to scurvy, and when some regiments had been stationed "Up Nile" for two years, where fresh vegetables were very scarce, it was not uncommon, the men first complaining of weakness and pain behind the knees and in the upper part of the calf. In the more severe cases in this class the disease manifested itself by great sponginess of the gums, which in some cases almost covered the teeth; swellings of the legs, ulcerations, &c. It invariably succumbed to treatment by lime-juice.

Sunstroke caused 64 admissions, 13 deaths, and 9 invalids—a small number considering the intense heat to which the men were exposed, with physical exhaustion and fatigue, and at times deficiency of water, often powerful predisposing causes, but counterbalanced by the healthy, out-door life, extreme dryness and purity of the air, and absence of intoxicating liquors.

Of 511 admissions for diseases of the eye, 486 were from conjunctivitis, and only 1 from purulent ophthalmia; 7 only were invalided. In the respiratory class the chief admissions were bronchitis, bronchial catarrh, pneumonia, and pleurisy. Dysentery and diarrhœa accounted for 923 admissions, and 911 among diseases of the digestive system. Of the former 60 died, as did also 5 from liver abscess. Much of the diarrhœa was attributed to chills, errors in diet, and impure water, and towards the end of the campaign to the too free use of fruits and tinned provisions when returning down river. Many cases of abscess of cellular tissue were caused by the severe manual labour employed in towing and rowing the boats in the river. General debility caused only 464 admissions. There were only 6 cases of *delirium tremens*, 4 of alcoholic poisoning, and 1 death. Thirty-seven deaths were due to drowning.

The admission rate for wounds equalled 22·4 per 1,000 in eight engagements. Of 241 wounded non-commissioned officers and men, 88 were wounds of the lower extremity, 66 of the upper, 22 of the head, 10 of the face, 10 of the neck, 12 of the chest, 19 of the back, and 4 of the abdomen. All the latter died. At Abu-Klea, January 17th, 1885, spear wounds accounted for half the total injuries. In all the other actions gunshot wounds prevailed. In the case of the spear wounds, the soft parts were usually

"horribly lacerated and deeply incised." As a rule the bony structure escaped and the main vessels. Some had to be covered with lint and bandages from head to foot, and took two hours to dress. When bones were extensively smashed, amputation was resorted to. All were dressed antiseptically, and where they fell. The spear wounds were dressed with carbolic, alternating with boracic acid. They required frequent dressing, but kept very sweet. In simple gunshot wounds the antiseptic dressings were not changed for days. In a case of amputation of the upper arm, dressed antiseptically, at the end of 14 days the patient was assisting in the wards of the hospital.

As a result of observation in the desert, it was thought that antiseptic dry dressings, wood-wool, &c., owing to their being absorbent, their warmth and the protection they afforded would be very serviceable in the field. In some of the amputation cases the flaps sloughed, due not to one but several causes—viz., severe collapse from the injury, great temperature variations—49° Fahr. at 5 a.m. to 91° Fahr. at noon—delay in operating owing to frequent movement, want of rest, arduous work, and use of tinned meats acting on the constitution, and when skin and skin flaps were much made use of. The flap method was employed in all operations, and hæmorrhage controlled by Esmarch's bandage, to the use of which some cases of sloughing of the flaps was attributed by one medical officer. The bleeding veins were secured by cat-gut ligatures, and chloroform given in all cases. Forty-three operations were performed, two secondary excisions, both of which terminated fatally. The pureness of the desert air aided greatly in the healing of wounds rapidly, and the patients' health improved quickly on removal from the camping grounds in the desert, which rapidly fouled from accumulation of large parties of men. The transport of the sick and wounded across the desert was effected by means of litters and cacolets fastened on camels and by stretchers carried by hand. The cacolets answered admirably. On reaching the Nile the patients were in some cases transported by water entirely to Cairo, or to Assiout, and thence in railway ambulance by land. The chief drawback to comfort was the intense heat.

Assouan was the first military station occupied by British troops on the Nile, situated on the right bank of the river, at the north end of the first cataract, 547 miles from Cairo. It had a population of about 4,000 inhabitants. The country is sandy and barren. On arrival at Assiout, the sick sent down by river steamer or

barges were transferred to invalid railway carriages, which came alongside the wharf. The hospital accommodation in Lower Egypt was—at the Citadel, Cairo, 500 beds; Abbasiyeh, 300; Ramleh, Alexandria, 500; Suez, 200.

Between November 27th, 1885, and January 27th, 1886, the frontier was again the scene of a military expedition under the command of Lieutenant-General Stephenson, terminating in the action at Ginnis, on December 30th. The average strength was 254 officers, 5,875 non-commissioned officers and men. Admitted to hospital, officers, 33; died, 3; non-commissioned officers and men, 1,152, and 56; killed in action, 2; wounded, 43. The admissions were—enteric fever, 3; simple continued fever, 10; dysentery, 6; eye, 1; respiratory, 6; circulatory, 3; local injuries, 1; in action, 3. Non-commissioned officers and men—enteric fever, 95, and 17 deaths; simple continued fevers, 155; dysentery, 127, and 4 deaths; other general diseases, 5; venereal, 85; parasitic disease, 3; scurvy, 1; debility, 12; rheumatism, 21; tubercular disease, 1; other diseases, 2; nervous system, 11; eye, 52; other organs of special sense, 11; circulatory, 8; respiratory, 35; digestion, 184; lymphatic and glandular, 4; urinary, 1; generation, 10; organs of locomotion, 2; connective tissue, 33; skin, 64; general injuries, 2; local, 53; in action, 43. Total, 1,052 in two months.

Rates per 1,000.

	Admissions	Deaths
Officers - - -	804·9	73·17
Non-commissioned officers and men	1,147·2	30·26

This force was formed into two infantry and 1 cavalry brigades, with the following hospitals from front to base at Assouan:—

With fighting line—

Movable field hospital	- 50 beds	- Surgeon-Major.
Kosheh Fort	- 25 „	- Surgeon.
Akasheh	- 25 „	- Surgeon.
Ambigole	- 9 „	- Surgeon.
Sarras	- 10 „	- Surgeon.

Station Hospital—

Halfa	- 150 „	- Brigade Surgeon.
Korosko	- 100 „	- Surgeon Major.

Base Hospital—

Assouan	- 200 „	- Brigade Surgeon.
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The movable field hospital was divisible into 2 sections of 25 beds each, and a medical officer with a pair of field panniers, field

companion, &c., were attached to each regiment. Between 30 and 40 patients could be evacuated from Akasheh on alternate days. The half bearer company which accompanied the cavalry and first brigade in pursuit of the enemy was constituted of 25 camels for sick—viz., 9 pairs of litters and 16 pairs of cacolets, and 21 camels for riding purposes for officers and men. 50 sick could be transported at one time. The sick were evacuated to Wady Halfa by bearer company from Abri to Kosheh, Kosheh to Sarkamatto by whale boats, Sarkamatto to Dal by cacolets, litters, stretchers, &c. They remained one night at Sarkamatto and one at Akasheh, and were transferred to Cairo. No sick requiring hospital diet or treatment for more than a few days were retained above Halfa.

*Total Admissions and Deaths in the Five Egyptian Campaigns,
1882-87. Aggregate Strength, 41,174.*

	Admissions	Deaths
Eruptive Fevers	52	5
Continued	8,855	339
Paroxysmal	352	6
Other General Diseases	21	0
Rheumatism	397	0
Primary Syphilis	977	0
Secondary "	269	0
Tubercular Diseases	41	4
Scurvy and Purpura	11	0
Other Constitutional	6	0
Nervous System	587	16
Eye	1,760	0
Ear	75	0
Circulatory	85	1
Absorbent	117	0
Respiratory	357	12
Digestive	6,203	108
Gonorrhœa	442	0
Sequæ of do.	92	0
Other Urinary	67	0
Generative System	115	0
Organs of Locomotion	70	0
Cellular Tissue	612	0
Cutaneous System	797	0
Debility	1,000	5
Poisons	15	1
General Injuries	42	42
Local	904	6
Wounded in Action	959	401
No appreciable Disease	22	0
Missing	0	42
General Total	20,099	983

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H., Lond. Univ.; Fellow of the Sanitary Institute and Member of the Board of Examiners; Assistant Professor of Hygiene and Public Health at University College, London; Assistant Examiner in Hygiene, Science and Art Department, South Kensington. London: H. K. Lewis. 1889. Crown 8vo. Pp. 471.

THE thought which comes into the mind as one reads this book is that the mantle of a worthy father has descended upon his son. Among the pioneers of modern sanitary science we may assuredly place the honoured name of Edmund A. Parkes, whose "*Manual of Practical Hygiene*" is to the present day a standard and a classical text-book.

And, now that the busy brain and facile pen of Edmund Parkes are at rest, the work to which he devoted his life is carried on by his son, Dr. Louis C. Parkes, who has already won his spurs as a champion of the cause of Hygiene and Public Health.

The chief object, perhaps, of the work before us is to provide a text-book of moderate size, but of sufficient scope, for candidates preparing to undergo the examination for Diplomas in State Medicine or Public Health granted by the several Universities and Medical Corporations. This object is well fulfilled, but the author, in his preface, trusts that the scope and arrangements of the work are also such as to render it well fitted for students in medicine and medical practitioners generally, "who cannot afford, now-a-days, to be without some knowledge of the science that has so strongly aroused the interest of the general public." He adds—"The work may also prove of value to the candidates in the Advanced and Honour Stages of the Hygiene Examinations of the Science and Art Department."

The contents are embodied in ten chapters or sections, each of which deals with a separate topic, and an appendix giving the standard solutions used for quantitative analysis in sanitary work.

The first chapter, on "Water," extends to 89 pages, and gives an excellent account of the sources, collection and storage of water, its composition, distribution, and purification, as well as its examination for sanitary purposes, under the headings Physical, Microscopical, Quantitative, and Biological. The quantity required per head of the population daily is estimated at 27·08 gallons, Glasgow having 50 and Norwich only 14·5. In the middle of the chapter about 8 pages are given up to the consideration of diseases produced by impure water. Under the heading "Enteric Fever," Dr. Parkes strongly insists that this fever is a specific disease in all cases. He formulates two strong arguments against the theory of its *de novo* origin, observing that "for all we know to the contrary, the specific poison of this disease may remain latent for years until some change in its surroundings and environment calls it again into a state of activity. Cases of the fever which to all appearance have had a *de novo* origin, may have in reality been caused by a long latent poison springing again into activity." (Pages 66 and 67). If this view is correct—as we think it is—many of the cases quoted by Murchison as examples of the spontaneous origin of pythogenic fever, so called by him, would receive a simpler and more intelligible explanation.

Chapter II., on the "Collection, Removal, and Disposal of Excretal and other Refuse," is even longer than its predecessor, running to 95 pages. It gives a good, if somewhat condensed, account of the conservancy systems of disposal of refuse, followed by a full and adequate description of the water-carriage system, illustrated by many drawings. The third section of this chapter is on the Disposal of Sewage, under the headings—the Purification and Utilisation of Sewage; its subsidence, straining, and precipitation; intermittent downward filtration and broad irrigation, or "the distribution of sewage over a large surface of ordinary agricultural ground, having in view a maximum growth of vegetation (consistently with due purification) for the amount of sewage supplied."* The best crops for a sewage farm are stated to be Italian rye-grass, roots (mangold wurzel) and cabbages. When properly carried out, sewage farming can produce no nuisance and is not unduly dangerous to health.

The kindred topics of Air and Ventilation, Warming and Lighting, are discussed in Chapters III. and IV. Judging the author by the elaborate calculations which are given under the

* The Royal Commission on Metropolitan Sewage Discharge.

heading of "Ventilation," Dr. Parkes is evidently a mathematician of no mean parts. Among other calculations he works out the answers to certain questions which have been given from time to time at the Cambridge Examinations for the "Diploma in Public Health" of that University, as it is now called.

Nothing can be better than the way in which the author treats of the important matters connected with ventilation, warming, and artificial lighting. The last-named topic is considered under the headings—Coal Gas, Petroleum Oils, and Electric Light. The relative cost of candles, kerosene or crystal oil, colza oil, and coal gas, in producing the same illuminating effect, is quoted from Dr. Brudenell Carter's article on "Lighting," in *Our Homes*, at page 271. To give a uniform light of 20 standard sperm candles for 100 hours, the candles would cost £4 5s. 9d.; colza oil, burned in moderate lamps with Silber's burner, would cost 5s. 9d.; petroleum oil, burned in Silber's burners, would cost 2s.; while coal gas, burned in an improved Argand burner, would cost 1s. 9½d., with gas at 3s. 4d. per 1,000 cubic feet. It is a pity that no comparative estimate of the cost of electric lighting is given. Its advantages are stated to be that "there is no consumption of oxygen, there are no products of combustion to pollute the air" (these are only relatively true), "and the heat produced is very slight. The light also is not yellow, but white." We are glad to see that Dr. Parkes condemns the arc light as being extremely dazzling, and productive of injurious effects on the eyes of those who are much exposed to its influence. To this we would add that it may be positively dangerous when used in an interior. The carbon candles or rods break off from time to time, or even explode, scattering incandescent fragments of carbon in all directions, and so causing a risk of fire.

Chapter V., on "Climate and Meteorology" is one of the poorest in the book. Only 12 pages are devoted to this wide subject. "Climate" is disposed of in 6 pages—we have no fault to find with what is said about it, but the topic is one which demands to be treated in more detail in a work on State Medicine. The section on the use of meteorological instruments has the same fault. The barometer described is a Fortin—the use of which is now largely superseded by the Kew barometer, a pattern of the instrument which was invented by Mr. P. Adie in 1854, for use at sea. The advantage which the Kew barometer has over Fortin's barometer is that only one operation is involved in reading the

former, whereas, in using the latter, two steps are required—one, the setting of the ivory point at the beginning of the scale so as to touch the surface of the mercury in the cistern of the barometer; and the other, the reading off of the top of the mercurial column by the scale and vernier. A diagram representing these takes up the whole of page 280. A far more useful illustration might have been borrowed—of course, with permission and acknowledgment—from Mr. R. H. Scott's "Elementary Meteorology."* Dr. Parkes defines (at page 283) a sunshine recorder as "a little instrument by which the rays of the sun are concentrated on to sensitive photographic paper revolved by clockwork." This is certainly not the form of sunshine recorder which is in common use at British Stations. The apparatus devised by Mr. John F. Campbell, F.G.S., and modified by Sir Gabriel Stokes, Bart, F.R.S., consists of a sphere of glass, which acts as a lens. The rays of the sun focussed by passing through this sphere are received upon a strip of mill-board stretched in a semi-circular frame at the proper focal distance. When the sun shines, a hole is burnt in the mill-board, and this becomes a continuous line as the sun moves, or rather appears to move, from east to west. Of course, as soon as the sun sets, or is hidden by a cloud, the record ceases. It will be observed from this description that the earth's rotation on its axis is the only "clockwork" which is needed.

Chapter VI., on "Soil and Building Sites," gives a great deal of useful information in a small space, and the reader is referred for further particulars on the subject of house construction to the article on "Architecture" in *Our Homes*, the authors being Mr. P. G. Smith, F.R.I.B.A., and Mr. K. D. Young, F.R.I.B.A.

It was to be expected that Dr. Parkes would write with much authority on Food, Beverages, and Condiments; and he has done so in the seventh chapter, which runs to 55 pages and includes an excellent account of the various food-stuffs. The chapter opens with a classification of the proximate constituents of food under two heads—nitrogenous and non-nitrogenous. Then follows a section on "Diets;" after which an account is given of meat, milk, butter, cheese, wheat-flour and bread, and the starches. The section on milk is particularly full and leaves nothing to be desired. The author is strongly in favour of the cooking of milk under all circumstances before it is consumed as food, and we are quite with him in this opinion. "Exposure to the heat of boiling

water for 5 minutes," he says, "destroys the life and action of every variety of specific disease virus, and practically sterilises the milk. The sterilisation—the destruction of all living organisms—is of especial importance where infants are fed on cow's milk. . . . The act of boiling produces no alteration in the nutritive properties of the milk, and its value as a food is in no way affected thereby." (Page 328).

Dr. Parkes's observations on fermented liquors are in accordance with common sense. He steers a medium course in discussing the value of wine and beer as articles of diet, not unmindful of the adage—

"Incidit in Scyllam cupiens vitare Charybdis."

At the same time, his remarks on the effects of alcohol will command the respect even of total abstainers.

A short account of Exercise and Clothing is given in Chapter VIII. It calls for no special comment. Seventy pages are, in the ninth chapter, devoted to the "Contagia," communicable diseases and their prevention, and hospitals. Dr. Parkes adopts unreservedly the germ theory, which assumes that the contagia are microscopic "living particles, organised in structure, and for the most part capable of independent life both within and without the animal body." The section of this chapter on Communicable Diseases is illustrated by some instructive diagrams and curves. The author's results as to the seasonal prevalence of certain zymotic diseases agree in the main with those long since obtained by us in Dublin.* In no uncertain tones he vindicates the claims of vaccination as a safeguard against small-pox; and while he admits the evanescence of the protective influence of primary vaccination after the age of 15, he strongly holds that "revaccination at puberty, if properly performed, confers almost absolute immunity from small-pox for the remainder of life, and, if by any chance a revaccinated person should acquire small-pox, the disease assumes its mildest type."

Proof that Dr. Parkes has culled his information from the most modern authorities is found in the fact that Dr. Ballard's views are given as to the intimate cause of summer-diarrhoea—namely, the rise of the temperature of the soil one foot below the surface above 56° Fahr.

The ninth chapter ends with a brief description of hospital

* Cf. *Manual of Public Health for Ireland*. Dublin: Fannin & Co. 1875. Page 295, *et seq.*

accommodation, construction, and management. Surely the author's estimate of the amount of hospital accommodation required for the isolation of cases of infectious diseases, given at page 433, is under the mark. He says:—"It may be stated generally that there should be at least one bed to every 1,000 of the population, *when this is largely composed of the industrial classes.*" He adds:—"No doubt that in epidemic periods it may be necessary to supplement existing hospital accommodation, but this is, at the best, an unsatisfactory makeshift."

This excellent text-book ends with a brief but capital description of the science of Statistics. The method of conducting statistical inquiries is first explained, and then the chief facts relating to vital statistics are set forth.

A tolerably full index is appended to the work, on the sterling merit of which we are in a position to congratulate the author.

Evolution and Disease. By J. BLAND SUTTON. "Contemporary Science Series." London: Walter Scott. 1890. 8vo. Pp. 285.

MR. SUTTON, in this his latest work, pushes still further the views he has previously enunciated regarding the bearing of the Darwinian theory on pathological problems. Intended as one of a series to elucidate contemporary ignorance of modern scientific teaching, it presupposes, we think, too much special knowledge on the part of the general reader. For while the views and theories put forward are of paramount interest to the professed pathologist and to the general student of medicine, yet few, outside this domain, will be found sufficiently grounded in recent biological researches, and the processes of disease, to be able to grasp, much less to criticise and weigh, the occasionally startling propositions that occur among the mass of less debatable matter. Take, for instance, the numerous references to the development of the embryo—the notochord, central nervous system, primitive intestinal canal, &c.—as explanatory of various malformations and vestigial remains, and we fear the average reader will soon abandon the book in despair. Or take the following sentence, which sums up the function of the allantois in certain classes of the animal kingdom:—"The allantois is the respiratory organ of the sauropsidian embryo," and we believe the number of even medical students to whom it would convey a definite meaning would, notwithstanding our higher educational tests, be limited indeed.

Apart from these defects, which have no relation to the book from a medical point of view, the reader will find food for reflection on every page. Starting with the object of indicating "that there is a natural history of disease, as well as of plants and animals," and endeavouring to show that "disease is controlled by the same laws which regulate biological processes in general," Mr. Sutton discusses enlargement of parts from increased use, disuse and its effects, vestigial parts, atavism, the transmission of malformations and acquired defects, tumours and cancers, and the zoological distribution of disease. It will be seen that in these are embraced the three laws of evolution as enunciated by Huxley, while the subject of heredity in all its manifold bearings is opened up.

The association of an overgrowth of dermal structures with nerve irritation, such as the tufts of hair found covering the defective bony arches in spina bifida occulta, receives an interesting illustration from a condition which is normal in Polish fowl. In these birds the head is surmounted by a large feathery tuft, underlying which is a defect in the bony vault of the skull, resembling the condition met with in meningocele:—"A study of the effects of spina bifida in man has led Virchow to regard the crown of feathers as the result of irritation;" and Darwin was "assured that we had here to deal with a character first acquired and transmitted by the hen." Here we have overgrowth from irritation, and the hereditary transmission of an acquired peculiarity strikingly illustrated. Another deduction from these hairy tufts in the loins, which is more of interest from an artistic standpoint, is mentioned by Mr. Sutton. He points out the resemblance between these abnormalities in man and the tails of the mythical fauns and ægipans, and quotes the opinion of Virchow as to their having a possible origin in this abnormality, so that "sculptors and artists did not trust entirely to the imagination, but that such oddities had a certain foundation in fact." And, further, "Recklinghausen has suggested that in many cases of spina bifida, disease of the bones of the foot occurs as a complication, and often induces loss of the middle toes; this may have stimulated on the imagination the notion of a cloven foot. It is, perhaps, not unfair to infer that from such sources as these originated the corporeal form of our much-dreaded mystical devil, with hairy body, cloven feet, and tail." It would be interesting if pathology should give the death-blow to this remnant of mediæval superstition and priestcraft. Much of interest will be found as to cervical auricles, and

their development from the opercula of the bronchial clefts, in the chapter dealing with "Vestigial Structures;" and full of interest is the discussion as to their origin on the statues of fauns and satyrs—a point first noticed by Mr. Shattock.

We cannot refrain from quoting the author's conclusions as to Potts' fracture, which will merit the attention of surgeons, viewed in the light of the history of the fibula as a bone which has undergone great alteration of function in the change from an aquatic to a terrestrial mode of life. In those animals in which the hind limbs are used chiefly as paddles to facilitate progress in the water, the tibia and fibula are of equal size:—"The descendants of some of these forms changed their mode of life, becoming semi-aquatic, or entirely terrestrial animals, and began to use their limbs for creeping, crawling, or running habits, which led to changes in the bony framework. In the case of the leg it is easy to see that it is advantageous for the weight of the body to be transmitted to the ground by one bone rather than two, hence the bone most used increased in size; this enlargement would induce a deviation of blood in favour of the bone most used—the tibia—to the detriment of the companion bone—the fibula. So truly does the fibula obey the law of heredity, that in the embryo it to some extent maintains its pristine eminence. . . . In the chick, at the fifth day of incubation, the fibula equals in length, and nearly in thickness, the tibia. . . . In man, at the third month of embryonic life, the fibula has a transverse section nearly equal to that of the tibia. . . . In such aquatic mammals as seals the fibula is not so small in proportion to the tibia as is the case with terrestrial mammals." The relation of these facts to Potts' fracture, which is not known to occur in any mammal except man, is shown by the following facts:—"In those mammals which so closely approach man in anatomical characters as the gorilla, chimpanzee, orang-gibbon, and macaque, the malleoli are on the same level"—contrary to what occurs in man, in whom the fibular malleolus extends much lower, and possesses a slenderer base than the tibial. "In 1886 Gegenbauer published the highly interesting observation that, in the human embryo at the fifth month of intra-uterine life, the tibial is more prominent than the fibular malleolus; at the seventh month they are equal; from this date onward the fibular exceeds in length the tibial malleolus. Thus, at the fifth month the human malleoli present a condition common to the majority of mammals; at the seventh month they correspond to the Simian

type, and subsequently assume the relation normal only in man. This extra length of the fibular malleolus gives great firmness to the ankle-joint, and has probably been acquired concurrently with the assumption of the erect posture." But it is just to this acquired peculiarity that the frequency of Potts' fracture is due; the extra length and slenderness of the fibular malleolus causing its greater liability to fracture in the lower fourth, when any sudden outward wrench is given to the foot. Of equal interest to surgeons is the fact that in the embryo, up to the seventh month, the foot retains a position which is normal in the orang, the inner border being drawn upwards and the sole of the foot looking inwards, while the dorsum is turned outwards. After the seventh month the foot assumes the normal rectangular condition, but should the Simian type persist, the condition known as talipes equino-varus is produced, and Messrs. Parker and Shattock have shown that in such cases the articular surfaces of the astragalus retain the Simian conformation. Further, Mr. Sutton has found in dissected specimens that in cases of congenital talipes equino-varus, the tibial and fibular malleoli are of equal length. These instances have been dwelt on at some length because they show, apart from their universal interest, the lines on which the book is written, and how the existence of a certain normal type of conformation in one animal is sought to explain, on evolutionary grounds, the existence of a pathological malformation (so-called) in an allied species.

Of dichotomy, many interesting examples are quoted—in the rays of the starfish, in the feathers of the emu, and in the antlers of the moose; and of dichotomy of the anterior and posterior segments examples are given in the chick, foal, shark, and lizard, as well as in the human subject—for instance, the two-headed nightingale. In connection with this duplicity, the development of two members from a single ovum, such as occurs in some worms as a constant process, is fully discussed. The author regards cases of supernumerary digits as instances of dichotomy, not, as was at first suggested by Darwin, of reversion—a theory which he subsequently abandoned. The hereditary transmission of supernumerary digits due to a partial dichotomy, although not atavistic, is in striking contrast to the non-transmissibility of acquired structural defects—as instanced by the docking of the tails of horses and dogs, of circumcision as practised for centuries by the Jews, or of piercing the lobule of the ear, a practice universal from time immemorial

among barbaric, and still among civilised races. "It may be confidently stated," writes Mr. Sutton, "that at present there is no satisfactory case known of the transmission of a defect—the result of mutilation." Frequent intermixture of blood would appear to be an important factor in the transmission of developmental defects, as in the case of the tailless trout of Islay, and a breed of pugs in which cleft palate is a constant condition. In man this is seen in isolated districts where the means of communication with the outside world are difficult, and intermarriage the rule, as in the case of the French village instanced by Professor Windle, where sexdigitism was almost universal, and in that of the cretinism of Alpine villages; in both cases the malformation tending to disappear with improved means of transit, and with intercrossing of the breed.

In the chapter on the "Causes of Diseases," Mr. Sutton adopts in its entirety, and pushes to its logical conclusion, Metschnikoff's theory of phagocytosis, though it must be borne in mind that other equally competent observers have failed to verify the active military organisation of leucocytes which he describes. An interesting analogy is drawn from the vegetable world to the modifications of the inflammatory process that may be produced by variations in the nature of the irritant, in the varieties of "galls on leaves due to the deposition of eggs in their interstices by insects, each insect producing, in this way, a different variety of gall, so that one-half may present at the same time several varieties of galls." and the bearing of this analogy in the different cutaneous eruptions of specific infective fevers—small-pox, scarlatina, measles, syphilis, &c., is discussed. Many other interesting and fruitful germs of thought might be instanced; but enough has been said to show the general purport of the book, and to give some idea of its rich suggestiveness. If we add that it is well and copiously illustrated, and published at a price within the reach of all, we feel confident it will soon find a place on every book-shelf, and that many will turn, with a sigh, from the new and ever-widening domain of biological science of which it gives a glimpse, and through whose portals "gleams an untravelled world, whose margin fades for ever and for ever as we move."

Terminologia Medica Polyglotta: a Concise International Dictionary of Medical Terms. Compiled by THEODORE MAXWELL, M.D., Camb.; B.Sc., Lond.; F.R.C.S., Edin. London: J. & A. Churchill. Paris: G. Masson. Philadelphia: P. Blakiston, Son, & Co. 1890. Royal 8vo. Pp. 459.

It is not easy to devise a new form of dictionary in these latter days, when "knowledge shall be increased." This difficult task Dr. Theodore Maxwell has successfully accomplished by compiling the work which lies before us, the object of which is to assist medical men of various nationalities to read and understand the medical literature of countries other than their own.

Seven languages are included in this truly polyglott dictionary—namely, Latin, English, French, German, Italian, Spanish, and Russian. In order, however, to render the work available for reading Russian medical literature, a Russian-French part is still required. This has been deferred for the present, and only the Russian equivalents for the various medical terms in the remaining six languages are inserted in the present edition of the dictionary, which contains some 25,000 words.

The plan of a single alphabetical arrangement for all the languages has been adopted. Thus, for example, at the top of page 3, we find as consecutive entries the words *Abnehmen*, *Abnormalitas*, *Abono*, *Abortus*, *Abort*, *Abortif*, *Abortiren*, *Abortivo*, *Aborto*, *Abotonado*, *Abouchement*, *Aboutir*, *Abquetschung*, *Abrasion*, and so on—apparently, a hopeless Babel of tongues, but by no means so in reality.

We will endeavour to explain how the dictionary is to be used.

In the first place, French has been selected as the key language. Accordingly, under each French term is given its equivalent not only in Latin, but also in English, German, Italian, Spanish, and Russian. Thus, a reader belonging to one of these nationalities can find the translation of a French term in his own language by a single reference. But, in the case of an entry in Latin, English, German, Italian, or Spanish—the terms in which languages are translated only into French, or sometimes into French and English—a further reference to the French translation first found will be necessary in order that a reader, who is of some nationality other than the French, may obtain the meaning of the term he required. For example, let us suppose that an Italian is reading German. He meets with the word *Leiste*, and wishes to find out

its meaning. Accordingly, he refers to the entry *Leiste* in the dictionary, but there he finds only the French *Aine*, and the English *groin*. Now, let us suppose further that he understands neither French nor English; he must then refer to the entry *Aine* in the dictionary, when he at once finds among the equivalents of that French word the Italian *Inquine*.

This will give a general idea how the dictionary must be used. We believe it to contain a veritable mine of wealth.

The genders are given only in the case of French and German words. The parts of speech are indicated when words are not substantives. Only exceptionally is the pronunciation of a word given. Anatomical terms receive special attention in the work. They are generally given in the vernacular in the Romance languages; in Latin, in the case of English, German, and Russian, although vernacular synonyms of Anglo-Saxon, Teutonic, and Slavonic origin are also frequently inserted.

It is hardly necessary to state that Dr. Maxwell required assistance in the compilation of this polyglott work. He was fortunate enough to secure assistance of the first rank, as a reference to the names of his coadjutors on the title page will show. We congratulate him on the successful completion of their combined labours so far, and welcome his book as a sterling contribution to cosmopolitan medical literature.

Coventry Urban Sanitary District. Fifteenth Annual Report of the Medical Officer of Health. Coventry: Connop & Sons. 1889. Pp. 26.

A CLEAR and interesting Report. On page 1 the increased prosperity of the town, from the growing demand for cycles, is commented upon. On page 13 there is an interesting case of the spread of the infection of measles at the end of the stage of incubation and before the development of any symptoms:—

“Thirteen children were associated together in a weekly class for two hours; all appeared in perfect health, but it turned out that two of these children, who had arrived in the district three days before, were incubating measles. During the afternoon both children were brought under my observation, but I failed to notice any sign of disease. That night, however, one child became ill, and on the following day the second sickened and developed measles. Of the other eleven children two were protected by a previous attack, and did not suffer, but not one of the

nine who were unprotected escaped. These children were carefully watched, and the first symptoms occurred after the following periods of incubation:—

2 in 14 days	2 in 11 days
1 „ 13 „	2 „ 9 „
1 „ 12 „	1 uncertain."

Dr. Fenton shows how strongly this points to the necessity of closing schools during epidemics of measles.

Transactions of the Kansas Academy of Science. 1887–88. Topeka: C. C. Baker. 1889. Pp. 128.

By aid of small print and thin paper a great deal is squeezed into a small space. Professor Snow traces the evolution of Dakota cretaceous fossil dicotyledonous leaves of coriaceous texture, with entire borders and unilateral stipules, into the present thinner leaves with serrated and paired stipules; many intermediate examples are given. There are other papers of interest.

A Manual of Anatomy for Senior Students. By EDMUND OWEN, M.B., F.R.C.S.: Surgeon to St. Mary's Hospital. London: Longmans, Green & Co. 1890. 8vo. Pp. 526.

It is to be regretted that in too many instances anatomy is regarded by the student as a dry and useless subject, only to be forgotten as soon as the necessary examination is successfully passed. This is not always perhaps entirely the fault of the student, but depends to some extent on the fact that by many teachers of anatomy sufficient stress is not laid on the application of anatomical knowledge to the practice of medicine or surgery. Therefore any work, we think, is to be welcomed which, dealing with anatomy from a purely medical or surgical point of view, yet does so in a sufficiently full and accurate manner; so that while the student is not wearied with that detail which is necessarily present in purely anatomical works, he will nevertheless find ample information on all anatomical points of practical interest.

The manual before us seems to fulfil the above conditions, and although there are several excellent manuals on applied anatomy in the field, we do not think that any of them has covered quite the same ground. We have looked through this work with considerable pleasure; it is eminently practical in aim, and is written in a clear and unconventional style. It will no doubt prove an excel-

lent guide to the knowledge of applied anatomy. There are, however, one or two points to which we should like to draw attention. The general arrangement is good, the various regions being treated of in order, commencing with the head and neck, and naturally concluding with the lower extremity. The section which deals with the brain appears rather short as compared with the space devoted to other far less important parts, and the subject of cerebral topography is rather scantily treated of. The sections on the eye and ear are particularly good, the drainage system of the eye being explained with great clearness. In the description of the heart, we notice that the cardiac impulse is mentioned as partly causing the first sound of the heart, another cause being given as the "slamming" of the auriculo-ventricular valves.

The section on the upper extremity does not call for any special comment. In the abdomen, the liver is properly described as possessing three surfaces, as has been shown by His, but the old description of the spleen and pancreas is adhered to. In the pelvis, the nerve to the obturator internus is said to leave the pelvis by the lesser sciatic notch, the reverse being the case. We think that the paragraphs dealing with the uterus and its displacements are capable of some improvement; the same remark may also apply—only perhaps more forcibly—to the description of the mechanism of parturition.

The work is abundantly illustrated, well bound, and of a convenient size; it possesses what no book of this nature should lack—a copious and accurate index.

Coca and its Therapeutic Application. By ANGELO MARIANI.

With illustrations. New York: J. N. Jaros. 1890. 8vo. Pp. 78.

THIS excellent and beautifully-illustrated monograph gives, in a very readable form, a history of *Erythroxylon coca* and the investigations it has called forth.

The subject is divided into five parts:—

1st. The botanical character of coca and its culture.

2nd. Its history, properties, and uses.

3rd. The physiological researches on coca and cocaïn.

4th. Its therapeutic application.

5th. A detailed account of the author's preparations of the plant.

This last section of the pamphlet is simply an advertisement; but the preceding 47 pages are most interesting and instructive.

PART III.

SPECIAL REPORTS.

REPORT ON FORENSIC MEDICINE.

By H. C. TWEEDY, M.D., Dubl.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow of the College of Physicians; Physician to Steevens' Hospital and to Simpson's Hospital.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

1. Insanity following Mumps.
2. Medico-Legal Detection of Human Blood.
3. Rupture of Right Phrenic Nerve proving instantly fatal.
4. A New Method of determining whether a Child is Still-born or not.
5. Some obscure Cases of Sudden Death revealed by Post-mortem Examination.
6. Poisoning by Antifebrin.
7. Poisoning by Gasoline.
8. Poisoning by New "Sicherheit" Explosive.
9. Nutmeg Poisoning.
10. Localisation of Arsenic in the Bones.
11. Post-mortem Imbibition of Poisons.

INSANITY FOLLOWING MUMPS.

DR. R. PERCY SMITH, Medical Superintendent of Bethlem, has recently called attention (*Lancet*, Aug. 10, 1889, p. 265) to the occurrence of insanity as a sequela of mumps, giving two illustrative cases which came under his own notice. A lad, aged 19, had had good health previously, and there was no neurotic family history. A fortnight before admission he had suffered from mumps, which was epidemic at the time in the district. The attack was complicated with exhausting diarrhœa. Five days before admission he became excited and passed into a condition of acute mania, from which he rapidly recovered in Bethlem. The other case was that

of a young medical man, who, after an attack of mumps complicated with severe orchitis, became depressed, suspicious, and suicidally inclined. He recovered after a time, without its having been necessary to send him to an asylum. Dr. Smith thinks that in each of these cases the extreme exhaustion caused by the complication of diseases had more to do with the induction of insanity than fever or metastasis.

MEDICO-LEGAL DETECTION OF HUMAN BLOOD.

Having noticed that in the blood of persons suffering from pernicious anæmia, crystals of hæmoglobin were formed in a thin film of blood placed on a slide, Dr. Copeman (*British Medical Journal*, July 27, 1889) determined to try and obtain crystals from ordinary blood by diluting it, and he found that when blood was diluted with serum obtained from sheep's blood which had been allowed to stand till it was somewhat decomposed, crystals of reduced hæmoglobin were produced. They consisted of rectangular plates of a pink or claret colour, or greenish if the layer of blood was very thin. With the exception of the monkey, the blood of the lower animals when it crystallises at all, does so in the form of oxy-hæmoglobin, not the reduced form, and as between monkey's and human blood the diagnosis was always easy, because the crystals in the latter instance would always be rectangular, and in the former diamond shaped, of which two adjoining sides would be no longer than the other two. The blood of many of the domestic animals, however, does not crystallise when treated in the manner above described; but it would not be safe, in the absence of other evidence, to assert that, because the blood did not crystallise, therefore it could not be human. Gamgee's method should then be resorted to. It consists of adding to defibrinated blood, about one-sixteenth of its volume of ether, and shaking the mixture until it becomes perfectly laky; it should then be set aside in a cool place, and in the course of a few hours, or two or three days, crystals form in abundance. The crystals thus obtained are radiating crystals of oxy-hæmoglobin. When human blood is treated in this way, it either does not crystallise at all, or only to a very slight extent, the crystals being rectangular and consisting of reduced hæmoglobin. Of the other proposed tests he has not formed a high opinion. Instead of the decomposing serum, pericardial fluid may be used. Dr. Copeman has not yet been successful in adapting his test to stale blood-stains, but he is con-

fidant that the method will prove as reliable in their case as in the case of fresh blood.

RUPTURE OF RIGHT PHRENIC NERVE PROVING INSTANTLY FATAL.

Dr. Mackenzie (*Medical Record*, Jan., 1890, p. 25) relates that a native coolie or porter, whilst carrying a bag of tamarind fruit from the river side to a boat on the bank, slipped and fell on his back with the bag on the front of his chest. His fellow-labourer picked him up at once but found that he was dead. On examination of the body the only injury which could be detected was a rupture of the right phrenic nerve in front of the root of the right lung. The lungs were highly congested; the heart was healthy; the other viscera were natural. In seven other cases Dr. Mackenzie has met with sudden death from occurrence of precisely similar accidents: in five of them the cause of death was fracture of one or more of the cervical vertebra, with injury to the spinal cord, and in the remaining two death was due to shock consequent on the fracture of the sternum.

A NEW METHOD OF DETERMINING WHETHER A CHILD IS STILL-BORN OR NOT.

Dr. Zaleski (*Archiv. für Kinderheilkundl.*, Bd. xi., Hf. I.) draws attention to the fact that the hydrostatic lung test for determining whether a child was still-born, or died after birth, is generally admitted to be unreliable. In fact, no one single test exists which can positively establish or deny that a child was born dead or living. The author points out that, in the first place, the foetal lungs contain only as much blood as is necessary for the nutrition of the pulmonary tissue, while the lesser circulation is inaugurated only after birth, and, as a consequence of this, the circulation in the lungs is in an instant many times increased. In the second place, the blood contains a constituent whose percentage is almost unalterable, and which is readily quantitatively estimated—namely, iron. Therefore a lung in which the act of respiration has taken place will contain considerably more iron than one which has not respired. Dr. Zaleski, therefore, believes that from the amount of iron found in the lungs, it may be determined whether the child was born alive or dead. Dr. Zaleski has estimated the amount of iron in seven cases. Four were cases of unmistakable dead birth; three, cases of infants born alive. In the former cases the average total amount of solids was 13.22 per cent., and of these, in the fresh state iron

was represented by ·0110; in the dry state, ·0828. Of the three cases born alive, the average solids were represented by 15·87, representing in the fresh state ·0188, and in the dry state, ·1182 per cent. of iron. In these cases the application of the hydrostatic lung test was very contradictory; one case, which was unmistakably still-born, giving a positive answer; another, which was unmistakably born alive, giving a negative answer. From his studies, Dr. Zaleski believes that he is warranted in drawing the following conclusions:—(1) The percentage of solids, as well as the percentage of iron, is considerably less in the lungs of children which have not breathed than in the lungs of children born alive; (2) the difference is especially evident in comparing in each individual case the amount of iron with the amount of solids; (3) even in the comparison of the averages, the difference is very perceptible; (4) the amount of iron in the lung-tissue increases with the age of the foetus or the child; (5) diseased conditions of the lungs have no marked influence on the amount of iron; (6) the imbibition of the pulmonary tissues with blood appears to be without influence of this test; (7) this test has never been found to be contradictory to other tests or to known facts; (8) the amount of iron in the lungs is invariably dependent upon respiration, and increases in direct proportion to the activity of the function of the lungs. From a theoretical point of view, the following objections may be made to this method:—First: The process requires a special education, and the facility for making a chemical analysis. This objection may be met, however, by the fact that all the physician requires to do is to ligate the roots of the lungs when they may be subjected to the hydrostatic test, and then submit them to the chemist for analysis. Second: The difference in the amounts of iron is so small that an error may be readily introduced; in this connection, however, it is only necessary to remember that the analysis must be made by a practised chemist, and that the differences are too great to fall within the probable error. Third: The amount of iron may vary in different individuals, since the amount of iron in the liver and spleen are subject to sudden variations. This objection may be met by the fact that the liver or spleen are blood-making organs, and therefore the percentage of iron in them must be subjected to variation. This is not, however, the case with the lungs. Finally, it must be admitted that further investigations are required before it can be positively stated that various pathological conditions, either of the mother and foetus or the child, will have an influence

on the amount of iron in the lungs, such as anæmia, leucocythæmia, or morbus Werlhofii, where the iron is diminished, or diabetes, where it is increased; while it must not be overlooked that, through neglect in ligating the umbilical cord, there may be serious bleeding, which will diminish the amount of blood, and, as a consequence, the amount of iron found in the lungs. The author finally claims that this method is applicable to the examination of lungs which are already in a state of putrefaction, where, of course, other tests cannot be applied, and where artificial respiration has been employed. In the latter case, however, it must be determined whether artificial respiration has led only to the introduction of air into the alveoli, and not to the introduction of blood into the pulmonary capillaries. In addition we may mention that Dr. Nikitin claims that if the stomach and intestine of the new-born child contained sufficient air to cause them to float on water, and if the artificial injection of air can be excluded, there is strong probability that the child was born living.

SOME OBSCURE CASES OF SUDDEN DEATH REVEALED BY POST-MORTEM EXAMINATIONS.

Dr. Samuel J. Moore (*Glasgow Med. Jour.*, Feb., 1890) contributes an interesting article on the subject of aneurysms and their connection with cases of sudden death. One case is recorded of a blacksmith, aged forty-five, who was found dead at the foot of the stair leading to his lodgings. On *post-mortem* examination, blood was found extravasated into the left side of the cerebellum, and down under the membranes over the medulla. On carefully washing away the blood, a small ruptured aneurysm, not much more than twice the thickness of the artery of which it formed part, was discovered in a branch of the basilar artery. This artery is very rarely subject to aneurysm. One of the most common forms of sudden death is a small pouched aneurysm at the origin of the aorta, behind a segment of the aortic valve, generally the posterior one, which bursts into the pericardium. Aneurysm of the thoracic aorta generally gives indications of its presence, but in many cases a correct diagnosis is very difficult. The following case is a good illustration:—A musician, aged thirty-seven, who was apparently healthy and a good athlete, consulted his medical man about a pain in his back, which came on suddenly after performing some feats on the cross-bar. His doctor could not detect any symptoms of aneurysm, but lest he might have injured the aorta he advised

him to rest for some weeks, and to abstain from violent exercise for some months. This advice was faithfully carried out, but about ten months afterwards the patient was playing at the piano when he suddenly fell back dead. On *post-mortem* examination a ruptured aneurysm of the aorta was found over the ninth and tenth dorsal vertebræ. Only a month before his death this patient insured his life and passed for a "first class" policy. Another curious case is recorded:—A man aged forty-three was admitted into hospital, complaining of pain in the region of the lower dorsal vertebræ. He was carefully examined by four eminent physicians, who came to the conclusion that the man was malingering, and they ordered him to leave the hospital the next day; during the night, however, the man threw himself out of a window, and fractured his skull. On *post-mortem* examination a large unruptured aneurysm of the aorta was discovered corresponding to the situation of the pain complained of.

POISONING BY ANTIFEBRIN.

The patient, a married woman, aged twenty-eight, consulted a druggist for facial neuralgia, as related by Dr. R. Haley (*Weekly Med. Rev.*, Nov. 9, 1889), and was given a large number of powders of antifebrin, each containing about four grains, with instructions to take a powder every two hours till she felt better. She followed this advice, and on the third day, feeling no better, she took one at 11 a.m. and another at 12 (noon). Twenty minutes later, whilst sitting by the stove, she fell out of her chair, became unconscious, grew cold, purple in the face, and seemed to be choking. Dr. Haley saw her at 1 p.m., when she had been partly revived by the administration of some strong coffee; her temperature was sub-normal, pulse 120, respirations 9 or 10, pupils slightly dilated, tongue somewhat dusky. She seemed to understand what was going on around her. Brandy and alcohol were given with tr. capsici and ginger, and in three hours most of the symptoms had disappeared. She could talk, and said her tongue felt stiff and her skin everywhere numb; her hands and feet felt like pieces of wood. She stated that after swallowing the last powder a violent pain soon came on in her left side, extending to the stomach; then she became chilly, and could not move her eyes or her tongue, and her head felt as if fixed in a vice; she then became unconscious. She completely recovered.

POISONING BY GASOLINE.

Gasoline is one of the products of petroleum used for illuminating purposes, two interesting cases of poisoning by which are recorded by Dr. Biller (*New York Medical Journal*, November 30, 1889). A baby, aged eighteen months, swallowed some gasoline, and was found by its mother in less than five minutes lying unconscious on the floor. In ten minutes Dr. Biller saw the child and found it unconscious, breathing eight or ten times a minute; pulse imperceptible, the heart's impulse exceedingly feeble; eyes rolled back; face livid. The skin of the neck and chest was bright red where some of the oil had been spilt, the jaws were firmly closed, the limbs rigid, the abdomen was distended and tympanitic, the body-surface cold and clammy. The child was put into a warm bath and an attempt was made to give it an emetic; it revived for a little while and seemed to recognise its parents, but the pulse was still imperceptible, and after remaining in this state about two minutes it suddenly dropped over, gasped a few times, and died. The child did not live more than thirty minutes after taking the poison. The second case was an infant, nineteen months old. He was seen by the doctor in less than three minutes from the time of taking the gasoline. He was then almost comatose, breathing slow, pulse imperceptible, eyes rolled back, pupils dilated, body surface cold, extremities livid. The mouth was filled with a sticky saliva that the child would occasionally force to the lips but not spit out, and the mouth and fauces were very red. Twenty drops of fluid extract of ipecac. were given by the mouth, and two drops of fluid extract of digitalis and fifteen of brandy hypodermically. The stomach was washed out with the pump, the food and fluid returned, smelling strongly of gasoline. Two drops of nitrite of amyl were placed on a handkerchief and held to the child's nose; soon the pulse began to flutter and grow quite strong; every three or four minutes the child would drop into a half-stupid state and become pale and blue; then the amyl was repeated. In an hour and a half after taking the poison he had recovered enough to talk and notice things and was then out of danger.

POISONING BY NEW "SICHERHEIT" EXPLOSIVE.

"Sicherheit" explosive is a German patent for blasting in coal mines, &c. The patient, as stated by Drs. Sykes and Twigg (*Brit. Med. Jour.*, July 20, 1889), a man aged thirty-three, was engaged

in mixing the ingredients in a steam bath, during which process noxious fumes are given off. The patient had been engaged at the work only two whole days when he came to the doctors complaining of frontal headache, of being very short of breath on exertion, and of being "muddled" in his mind. He was deeply cyanosed, pulse 99, jerky, blood purplish black in colour, under the microscope red corpuscles crenated; first sound of heart indistinct, blood-vessels of fundus oculi unusually dark in colour and dilated, temperature slightly raised, urine dark orange brown, acid, specific gravity 1030, no sugar. The treatment consisted of exposure to free air and sunlight, and absence from the mixing room, and in the course of two days he had completely recovered his natural appearance. It is stated that similar cases had occurred at the works, but the reporters were unable to get details.

NUTMEG POISONING.

Dr. Sawyer (*New York Med. Journ.*, Sept. 28, 1889), when called to the patient, a boy aged three years, found him with a normal temperature and respiration; pulse regular, but a little slow; all the muscles completely relaxed. An attempt to rouse him failed, his head falling whichever way the body inclined. The pupils were completely dilated. He learnt that the child had eaten five large nutmegs, soon after which he had complained of feeling dizzy and had fallen asleep, from which state they had been unable to rouse him. He slept continuously for thirty hours, and then awoke as if from natural sleep. He subsequently had a great dislike for nutmegs.

LOCALISATION OF ARSENIC IN THE BONES.

In reference to the question of the diffusion of poisons after death, and the difficulty of distinguishing between poisons given during life and those added after death for preservative purposes, M. Pouchet (*Rev. Scientifique*, Oct. 26, 1889) insists upon the fact that whenever arsenic is administered during life—whether by hypodermic, or intravenous injection, or by the mouth—it tends to accumulate in the spongy bones, especially in those of the cranium and vertebræ, where its presence may be detected long after all trace has disappeared from the viscera, and even from the liver. This localisation in the spongy osseous tissue is particularly well marked when arsenic has been given in small doses spread over a long period of time; when, on the other hand, it is given in doses capable of causing death

within a few hours, it is to be sought for preferably in bones largely built up of compact tissue. The arsenic thus accumulated is very slowly eliminated, and may still be found eight or ten weeks after the administration of the poison has been discontinued, whereas the viscera often give a negative result as early as the third week. Investigations on animals have afforded well-marked evidence of elimination of arsenic by the skin and hair. The researches of Papillon, Rabuteau, and, later, of Dragendorff, had already demonstrated the fact of the substitution of arsenic for the phosphates in bone; but to M. Pouchet belongs the credit of having first demonstrated the slowness with which it is eliminated from bones—a point of very great importance in medico-legal practice. This discovery, however, would not presumably afford a solution of the problem of deciding whether or not the poison was administered during life, should arsenic have been injected *post mortem* into the veins.

POST-MORTEM IMBIBITION OF POISONS.

In a paper read before the Med. Juris. Soc. of Philadelphia, Prof. Reese, after alluding to recent experimental researches, states that it may be accepted as a fact that all poisons, organic as well as mineral—at least, all those susceptible of solution—do undergo the process of imbibition or transfusion into the various organs and tissues of a dead body, and that in every criminal trial for poisoning this important fact should be borne in mind for the benefit of the accused. The question, therefore, arises whether there are any means by which, in the case of death from alleged criminal poisoning, we can positively discriminate between the poison administered before death and that which may have been injected into the body designedly after death. Prof. Reese holds that the answer to such a question cannot be given by chemistry alone, since the results of a purely chemical analysis must be the same in both cases. The first point to be attended to is, that in the case of poisoning, where the poison has reached the various organs by means of the blood vessels during life, the interior of the organ will contain quite as much of the poison as the exterior, while in *post-mortem* imbibition, the exterior of the organ would be more affected than its interior. Again, it is probable that histological and pathological changes, recognisable only by the aid of the microscope, would be found in the various viscera as a result of *ante-mortem* poisoning, whilst no such changes would result from mere transudation after death. Another factor in diagnosis is the

examination of the urine during life in a suspicious case, which should never be neglected. An examination made after death, especially long after death, does not give evidence that can be relied upon, as the poison may penetrate the bladder by imbibition. After all, very frequently in these cases the attendant circumstances have to be relied upon for a proof of a crime, the symptoms manifested by the deceased being the most important of these, but they have seldom more value than as being highly suggestive, and cannot be regarded as affording absolute proof. Other important circumstances are a motive for murder on the part of some one—*e.g.*, a life insurance claim, and the possession of the actual poison used by a suspected person. The paper concludes with a strong plea for State interference to check the promiscuous embalming of bodies, by which means there are very strong grounds for believing a crime has been on more than one occasion successfully concealed.

PAPAIN IN EAR DISEASES.

DR. R. M'KENZIE JOHNSTON describes (*Edinburgh Medical Journal*, January, 1890) his experiences with the use of papain in ear diseases. He uses it in chronic suppuration of the middle ear attended with pain, and in cases of old-standing disease where there is only a little thin and probably foul-smelling discharge, probably associated with some diseased bone. The following is the way he employs the drug:—15m of a 5 per cent. solution of papain are dropped into the ear, care being taken that the fluid reaches the bottom of the meatus. If necessary the patient may be made to swallow while holding the nose, so as to draw the fluid into the middle ear. Mindful that bacteria develop largely in fluids acted on by this drug, Dr. Johnston allows it to remain only for one hour, after which the ear is syringed out with boracic lotion and carefully dried. This may be repeated as often as necessary.

INTRA-LARYNGEAL INJECTIONS.

MR. WALKER DOWNIE (*Glasgow Medical Journal*, December, 1889) gives a series of cases in which he used intra-laryngeal injections of various drugs, such as menthol, carbolic acid, creasote, and eucalyptus; the last, however, was disliked by the patients and given up. The solvent used was olive oil. A vulcanite laryngeal tube, fitted to an ordinary hypodermic tube, was the instrument used. Menthol and creasote in combination are especially recommended. Out of forty cases (mainly tubercular) thirty-eight were benefited. The diminution of hectic and increase of weight are exhibited on charts.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.

General Secretary—W. THOMSON, M.D.

SECTION OF MEDICINE.

President—LOMBE ATTHILL, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, April 11, 1890.

The PRESIDENT in the Chair.

Massage.

DR. KENDAL FRANKS read a paper on Massage. [It will be found at page 481.]

MR. COX believed, from what he had read of the experience of Weir Mitchell and Playfair, that the importance of massage, carried out in detail, combined with high feeding, rest and isolation, could not be exaggerated; but, of course, bodily exercise achieved better results than massage in stimulating respiration and the circulation of the blood.

DR. ORMSBY said he had had considerable experience of massage since 1880, and he was fully sensible of the utility of that method of treatment in suitable cases—for instance, in the case of a young lady, who for nearly three years occupied a recumbent position suffering from hysterical paralysis, he adopted massage, as part of the Weir Mitchell treatment, and it proved highly beneficial, after almost every other form of treatment had failed; but there were many cases in which hysterical young ladies, when the treatment was abandoned, relapsed. Massage of itself would not suffice. He had more faith in Weir Mitchell's treatment, which combined massage with seclusion, rest, electricity, and dietetics. While regarding massage as a valuable agent in suitable cases, he was

satisfied that it was not a cure-all, and that from its indiscriminate use it was desirable the treatment should be placed on a scientific basis. He held that massage in surgery for recent fractures was wholly out of place, and he could not understand how any surgeon of experience would adopt it in a compound fracture or a Potts' fracture. In the case of the valet referred to it might have been that there was no fracture at all. It was not uncommon to find instances of resident pupils putting up accidents as fractures which, on examination by the visiting surgeon, proved not to be fractures.

MR. TOBIN mentioned that in the northern parts of India he had seen massage adopted to put horses into marketable condition with the minimal expenditure of material. Balls composed largely of ghee and sugar were shoved into the horse's throat, and some hours afterwards the animal was massaged at the particular parts where development was desired. The masseur with gloved hands pounded the flesh at those parts; but the horse was never exercised, and so the required development was brought about in the cheapest way. Although the horses were bought in large numbers for the artillery, he did not consider the animals were in condition to "go," their lungs and heart not being in a corresponding state of development. Hence he thought it was advisable to combine exercise with massage. Indeed, remembering how old the practice of massage was it seemed anomalous that medical men should have abandoned it for their patients, while they kept it in force for their horses, which always thrive when well groomed.

DR. WALLACE BEATTY said he had had experience of a remarkable instance, in 1884, of the benefit of massage. An army medical man who had been in India, got intermittent fever and lost the power of digestion, so that he was unable to take anything but milk, and that in small quantity. Any other food gave him heartburn and made him miserable. A Dublin physician, who had treated him for two or three months without doing any good, was of opinion that he had malignant disease of the stomach. At length the patient came to him, and he saw him along with Dr. Head. Various things were fruitlessly tried. The patient was losing flesh—from ten stone he went down to seven, and his tongue was constantly furred. As a last resource, he proposed to try massage; and the patient having consented, was placed in the Adelaide Hospital, where his brother, who was a strong man, was also accommodated in order to massage him. In nine days his tongue got clean, he gained a stone in weight, and from that out his progress to recovery went on till he was able to resume duty in Dublin.

DR. M. A. BOYD said he had had some five or six cases treated by massage, and two of these with such success as to make a great impression upon him. One was that of a lady, aged fifty, who had sciatica of two years' standing, for which she had been blistered, fired, punctured, and

received hypodermic injections of morphni, and even electricity was used, without avail. At last he tried massage, and in three weeks the pain disappeared. The lady remained well for two months, when she got sciatica in the opposite side. After three weeks' treatment by massage the pain disappeared altogether. The other case was one of alcoholic neuritis, which, having resisted treatment by electricity, was ultimately cured by massage. Dr. Franks had omitted to notice that very important group of paralytic cases—namely, paralysis depending on neuritis.

DR. ALFRED SMITH said he had found massage beneficial in cases of prolapse of the uterus, and of accumulations in the pelvis, the products of cellulitis, as he had already detailed in a communication which he read before the Obstetrical Section.

DR. HEUSTON observed that he had employed massage with signal success in a case of traumatic paraplegia. A soldier in the Egyptian campaign was occupied at earthworks, which fell in, burying him in the *débris*. When dug out he was found to be insensible, and upon being restored he had paraplegia. He was sent to the base hospital at Cairo, and thence he was invalided home to Netley, where he was kept for a year, till he could move about on crutches. Having been discharged he went home, and after a couple of years he was able to go about with the aid of sticks. Then he suffered from his bowels and suppression of urine. Having taken him into the Adelaide Hospital, under massage treatment, he recovered, and was able to walk about in two months, when he was discharged cured.

DR. NINIAN FALKINER suggested the utility of massage in amenorrhœa to bring on the menstrual flow.

DR. FRANKS replied.—Massage would be found beneficial in infantile paralysis, owing to the great developmental power in the child, while it was not so likely to succeed in arresting progressive atrophy in the adult. Dr. Ormsby's strictures on the use of massage in fractures were founded on theory only. There was no error in diagnosing the fracture, and he was satisfied that the results described had been achieved by massage, which he believed would be the great treatment of the future for fractures. He did not refer to compound fractures, in which he would hesitate to employ massage; nor could he speak positively of the treatment in certain oblique fractures, or fractures about the neck of the thigh bone. But what he claimed for massage was that it induced rapidity of union without deformity by preventing adhesions from forming round joints. As regards the interesting cases referred to by Dr. Smith, he had himself advised massage in a case of retroflexed uterus, for which a pessary was used. The pessary was removed, and massage having been tried, the uterus became normal, and there was no need to put in a pessary again.

The Section adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.;
F. R. Met. Soc.; Diplomat in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, April 19, 1890.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	March 29.	April 5.	April 12.	April 19.		March 29.	April 5.	April 12.	April 19.
Armagh -	15.5	25.8	15.5	20.7	Limerick -	33.7	22.9	25.6	13.5
Belfast -	40.0	31.9	33.7	34.8	Lisburn -	14.5	9.7	9.7	14.5
Cork -	31.2	20.1	21.4	27.3	Londonderry	26.7	23.5	32.1	30.3
Drogheda	25.4	25.4	16.9	46.5	Lurgan -	66.7	15.4	20.5	10.3
Dublin -	25.3	25.0	23.9	25.4	Newry -	24.6	10.5	21.1	31.6
Dundalk-	39.3	4.4	26.2	13.1	Sligo -	67.4	9.6	19.2	33.7
Galway -	50.4	13.4	50.4	43.7	Waterford -	25.5	34.7	32.4	13.9
Kilkenny	33.8	16.9	12.7	21.1	Wexford -	29.9	25.7	34.2	17.1

In the week ending Saturday, March 29, 1890, the mortality in twenty-eight large English towns, including London (in which the rate was 18.5), was equal to an average annual death-rate of 21.4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24.2 per 1,000. In Glasgow the rate was 28.0, and in Edinburgh it was 20.5.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 31.7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3.9 per 1,000, the rates varying from 0.0 in seven of the districts to 10.3 in Lurgan. The thirteen deaths from all causes registered in that district comprised 1 from scarlatina and 1 from enteric fever. Among the 178 deaths from all causes registered in Belfast are 21 from measles (being 3 over the number from that disease

in the preceding week), 13 from whooping-cough (being an increase of 5 as compared with the number for the preceding week), 1 from diphtheria, 4 from enteric fever, and 1 from diarrhoea. The 48 deaths in Cork comprise 1 from typhus, 1 from whooping-cough, 4 from simple-continued fever, and 3 from diarrhoea. Among the 25 deaths in Limerick are 2 from scarlatina. The 15 deaths in Londonderry comprise 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 201—97 boys and 104 girls; and the deaths to 175—86 males and 89 females.

The deaths, which are 49 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·8 in every 1,000 of the estimated population. Omitting the deaths (4 in number) of persons admitted into public institutions from localities outside the district, the rate was 25·3 per 1,000. During the first thirteen weeks of the current year the death-rate averaged 36·2, and was 3·2 over the mean rate in the corresponding period of the ten years 1880–89.

The number of deaths from zymotic diseases registered is 17, being 10 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended March 22. The 17 deaths comprise 3 from measles, 2 from influenza, 5 (all in No. 4 South City—Grand Canal-street—district) from whooping-cough, 1 from diphtheria, 1 from enteric fever, 1 from diarrhoea.

The number of cases of enteric fever admitted to hospital is 9, being 1 under the admissions for the preceding week. Thirteen enteric fever patients were discharged, and 47 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, March 22.

Five cases of typhus were admitted to hospital, being 1 over the admissions for the preceding week, but 2 under the number for the week ended March 15. Six patients were discharged, 1 died, and 15 remained under treatment on Saturday, being 2 under the number in hospital at the close of the preceding week.

Only 1 case of scarlatina was admitted to hospital against 6 admissions for the preceding week: 14 cases of the disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 46, in the week ended March 15, to 53 in the following week, fell to 28, or 23 below the average for the corresponding week of the last ten years. The 28 deaths comprise 20 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, April 5, the mortality in twenty-eight large English towns, including London (in which the rate was 16·7), was equal to an average annual death-rate of 19·3 per 1,000 persons

living. The average rate for eight principal towns of Scotland was 24.1 per 1,000. In Glasgow the rate was 27.0, and in Edinburgh it was 23.4.

The average annual death-rate in the sixteen principal town districts of Ireland was 25.3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3.0 per 1,000, the rates varying from 0.0 in twelve of the districts to 8.9 in Londonderry. The 16 deaths from all causes registered in that district comprise 1 from typhus, 3 from whooping-cough, and 1 from diphtheria. Among the 142 deaths from all causes registered in Belfast are 10 from measles (being 11 under the number from that disease in the preceding week), 14 from whooping-cough (being an increase of 1 as compared with the number for the preceding week), 2 from simple-continued fever, 3 from enteric fever, and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 213—122 boys and 91 girls; and the deaths to 180—88 males and 92 females.

The deaths, which are 24 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26.6 in every 1,000 of the estimated population. Omitting the deaths (numbering 11) of persons admitted into public institutions from localities outside the district, the rate was 25.0 per 1,000. During the first fourteen weeks of the current year the death-rate averaged 35.5, and was 2.6 over the mean rate in the corresponding period of the ten years 1880-89.

Twenty-five deaths from zymotic diseases were registered, being 1 in excess of the average for the corresponding week of the last ten years, and 8 over the number for the week ended March 29. They comprise 6 from measles, 1 from influenza, 5 from whooping-cough, 1 from diphtheria, 1 from simple-continued fever, 4 from enteric fever.

Ten cases of enteric fever were admitted to hospital, being 1 over the admissions for the preceding week and equal to those for the week ended March 22. Nine enteric fever patients were discharged, and 48 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Only 1 case of typhus was admitted to hospital against 5 for the preceding week. Three patients were discharged, and 13 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, March 29.

Three cases of scarlatina were admitted against 1 case for the preceding week, and 6 cases for the week ended March 22. Sixteen cases of this disease remained under treatment in hospital on Saturday.

Thirty-seven deaths from diseases of the respiratory system were

registered, being 9 over the number for the preceding week, but 13 under the average for the 14th week of the last ten years. They comprise 20 from bronchitis, 11 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, April 12, the mortality in twenty-eight large English towns, including London (in which the rate was 19·1), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·8 per 1,000. In Glasgow the rate was 28·1, and in Edinburgh it was 22·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 26·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in seven of the districts to 5·2 in Belfast. The 150 deaths from all causes registered in that district comprise 7 from measles (being 3 under the number from that disease in the preceding week), 10 from whooping-cough (being a decrease of 4 as compared with the number for the preceding week), 4 from enteric fever, and 2 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 185—98 boys and 87 girls; and the deaths to 166—76 males and 90 females.

The deaths, which are 33 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·5 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000. During the first fifteen weeks of the current year the death-rate averaged 34·8, and was 2·2 over the mean rate in the corresponding period of the ten years 1880–89.

Only 13 deaths from zymotic diseases were registered, being 12 below the average for the corresponding week of the last ten years, and also 12 under the number for the week ended April 5. They comprise 2 from measles, 5 from influenza, 3 from whooping-cough, 1 from enteric fever, 1 from diarrhoea. In 2 of the fatal cases of influenza the disease was complicated with heart disease, in 1 with congestion of the lungs, and in 1 with uræmia.

Nine cases of enteric fever were admitted to hospital. This number shows a decline of 1 as compared with the admissions for the preceding week, but is equal to the number for the week ended March 29. Eight enteric fever patients were discharged during the week, and 49 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Four cases of typhus were admitted to hospital against 4 for the preceding week and 5 for the week ended March 29. Three patients were discharged, and 14 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, April 5.

Eight cases of measles and 2 of scarlatina were admitted against 2 cases of the former and 3 of the latter disease admitted during the preceding week. Eight cases of measles and 18 of scarlatina remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 28, in the week ended March 29, to 37 in the following week, fell this week to 20, or 23 below the average for the corresponding week of the last ten years. They comprise 12 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, April 19, the mortality in twenty-eight large English towns, including London (in which the rate was 19·0), was equal to an average annual death-rate of 20·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·0 per 1,000. In Glasgow the rate was 29·8, and in Edinburgh it was 24·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 27·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in twelve of the districts to 5·6 in Belfast—the 155 deaths from all causes registered in that district comprising 12 from measles (being 5 over the number from that disease in the preceding week), 1 from scarlatina, 6 from whooping-cough (being a decrease of 4 as compared with the number for the preceding week), 2 from enteric fever, and 4 from diarrhoea. Among the 42 deaths in Cork are 1 from typhus and 1 from enteric fever.

In the Dublin Registration District the births registered amounted to 179—104 boys and 75 girls; and the deaths to 179—91 males and 88 females.

The deaths, which are 28 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·4 in every 1,000 of the estimated population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 25·4 per 1,000. During the first sixteen weeks of the current year the death-rate averaged 34·2, and was 1·7 over the mean rate in the corresponding period of the ten years 1880—89.

Only 12 deaths from zymotic diseases were registered, being 1 under the low number for the preceding week, and 13 below the average for

the sixteenth week of the last ten years. They comprise 1 from measles, 1 from typhus, 3 from influenza, 2 from whooping-cough, 1 from enteric fever. In 2 of the fatal cases of influenza the disease was complicated with pneumonia, and in 1 with phthisis.

Fourteen cases of enteric fever were admitted to hospital, being 5 over the admissions for the preceding week. Thirteen enteric fever patients were discharged, and 50 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Seven cases of typhus were admitted to hospital against 4 for the preceding week. Nine patients were discharged, 1 died, and 11 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, April 12.

Eight cases of measles and 1 case of scarlatina were admitted against 8 cases of the former and 2 of the latter disease admitted during the preceding week. Thirteen cases of measles and 16 of scarlatina remained under treatment in hospital on Saturday.

Thirty-four deaths from diseases of the respiratory system were registered, being 14 over the number for the preceding week, but 11 under the average for the sixteenth week of the last ten years. They comprise 18 from bronchitis and 9 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of April, 1890.*

Mean Height of Barometer,	-	-	-	29.842 inches.
Maximal Height of Barometer (on 1st, at 9 a.m.),	-	-	-	30.302 „
Minimal Height of Barometer (on 15th, at 9 p.m.),	-	-	-	29.457 „
Mean Dry-bulb Temperature,	-	-	-	46.3°.
Mean Wet-bulb Temperature,	-	-	-	43.2°.
Mean Dew-point Temperature,	-	-	-	39.8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.247 inch.
Mean Humidity,	-	-	-	78.7 per cent.
Highest Temperature in Shade (on 20th),	-	-	-	63.6°.
Lowest Temperature in Shade (on 3rd),	-	-	-	31.2°.
Lowest Temperature on Grass (Radiation) (on 3rd)	-	-	-	24.8°.
Mean Amount of Cloud,	-	-	-	53.5 per cent.
Rainfall (on 14 days),	-	-	-	1.575 inches
Greatest Daily Rainfall (on 15th),	-	-	-	.439 inch.
General Directions of Wind,	-	-	-	N.W., E.

Remarks.

April, 1890, was generally a favourable month. The mean temperature, rainfall, and rainy days were all somewhat below the average.

Considered by weeks, the weather was first fine, dry, and quiet; then cold and showery, then dull and cheerless; then unsettled, squally, and showery, and lastly fine.

In Dublin the mean temperature (47.3°) was slightly below the average (47.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 46.3° . In the twenty-five years ending with 1889, April was coldest in 1879 (the cold year) (M. T. = 44.5°), and warmest in 1865 and 1874 (M. T. = 50.4°). In 1886, the M. T. was 46.3° , in 1887 it was as low as 45.1° , in 1888 it was only 45.7° , and in 1889 it was 46.1° .

The mean height of the barometer was 29.842 inches, or 0.015 inch below the average value for April—namely, 29.857 inches. The mercury rose to 30.302 inches at 9 a.m. of the 1st, and fell to 29.457 inches at 9 p.m. of the 15th. The observed range of atmospherical pressure was, therefore, only 0.845 inch—that is, a little more than eight-tenths of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 46.3° , or only 1.7° above the value for March, 1890. Using the formula, *Mean Temp.* = *min.* + (*max.*—*min.* $\times .476$), the value becomes 47.0° , or 0.4° below the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive (47.4°). The arithmetical mean of the maximal and minimal readings was 47.3° , compared with a twenty-five years' (1865–1889 inclusive) average of 47.7° . On the 20th, the thermometer in the screen rose to 68.6° —wind S.W.; on the 3rd the temperature fell to 31.2° —wind, calm. The minimum on the grass was 24.8° on the same date. The rainfall was 1.575 inches, distributed over 14 days. The average rainfall for April in the twenty-five years, 1865–89, inclusive, was 2.055 inches, and the average number of rainy days was 15.2. The rainfall, therefore, was considerably below the average, while the rainy days were also deficient. In 1877 the rainfall in April was very large—4.707 inches on 21 days; in 1882 also 3.526 inches fell on 20 days. On the other hand, in 1873, only .498 of an inch was measured on 8 days; and in 1870 only .838 of an inch fell, also on 8 days.

No solar halos were seen. There was a lunar halo on the 24th. The atmosphere was more or less foggy on the 1st, 2nd, 3rd, 4th, 11th, 12th, 27th, and 28th. High winds were noted on 11 days, but on only two occasions was the force of a gale attained—namely, on the 7th and 22nd. Snow or sleet occurred on the 10th; and hail fell on the 8th, 10th, 22nd, 23rd, and 25th. The temperature exceeded 50° in the screen on 23 days, compared with 19 days in March, 2 days in February, and 17 days in January. It fell below 32° in the screen on one night only—that of the 3rd. The minima on the grass were 32° , or less, on 13 nights, compared with 16 nights in March, 18 in February, and 15 nights in January. The mean lowest temperature on the grass was 34.1° , compared with

34.4° in 1889, 34.6° in 1888, and 31.6° in 1887. A peal of thunder was heard to the westward at 12 10 p.m. of the 26th.

During the period ending Saturday the 5th anticyclonic conditions, accompanied with fine, dry, quiet, cool weather prevailed. The barometer was uniformly rather high and the winds were light and variable. The diurnal range of temperature was large. On the 3rd not a cloud was seen from morning to night. On Saturday the 5th it became evident that areas of low atmospherical pressure were about to encroach on the Irish coasts from the Atlantic—the barometer fell decidedly, clouds increased, and temperature rose. In Dublin the barometer ranged from 30.302 inches at 9 a.m. of Tuesday the 1st (wind, N.), to 29.942 inches at 9 p.m. of Saturday the 5th (wind, S.W.). The thermometer rose to 56.3° on Friday, having fallen the previous day to 31.2° in the screen and to 24.8° on the grass. Rain fell only on Saturday night, the resulting measurement being .059 inch.

Severe weather prevailed during the greater part of the second week—polar winds, cold showers, and frosty nights being experienced after Easter Day, the 6th, which was chiefly fine and mild. On this day a general decrease of atmospherical pressure occurred all over North-Western Europe, and at night an extensive depression travelled eastwards across Scotland, momentarily growing deeper. It caused squally S.W. and afterwards N.W. and N. winds, and rain fell generally. By 8 a.m. of Tuesday, the 8th, the centre of this system had reached the Skager-Rack, the barometer being as low as 28.84 inches at the Scaw—northerly winds, showers of hail, sleet, and cold rain, and low temperatures were prevalent in the British Islands, especially in Great Britain, where also thunder and lightning occurred at many stations. At this station the mean height of the barometer was 29.851 inches. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43.8°, while the mean calculated from the daily highest and lowest readings in the shade was 45.2°. The rainfall was .299 inch, on four days; the heaviest fall in 24 hours being .106 inch on Thursday.

On the east coast of Ireland, as is usual in easterly winds, very dull, cold, cheerless weather prevailed throughout the third week, and the 15th and 16th were wet in Dublin. In the west and northwest, however, the weather was much finer and brighter, although cold for the time of year. A severe thunderstorm occurred in the counties of Cork and Kerry on Thursday the 17th. During the entire period the weather was determined by a large area of low atmospherical pressure, which advanced slowly northwards and at the same time spread out in an easterly direction across France and Germany, while all through the barometer was high over Lapland and the northern part of Sweden and Norway. Fresh or squally easterly winds, consequently, prevailed, accompanied by low temperature, densely clouded skies, and cold rain at times. Thunder

storms were reported daily from France after Sunday. Early on the morning of that day severe frost occurred in Great Britain—the lowest temperature of all being 24° at Nairn. In Dublin the mean height of the barometer was 29·636 inches. The mean dry bulb temperature at 9 a.m. and 9 p.m. was $45\cdot8^{\circ}$, the corrected mean of the daily highest and lowest shade temperature was $46\cdot2^{\circ}$. The rainfall was ·503 inch on two days—·439 inch fell on Tuesday and ·064 inch on Wednesday. The mean amount of cloud at 9 a.m. and 9 p.m. was no less than 92 per cent.

At first summerlike, the weather in the week ending Saturday, the 26th, soon became unsettled, squally, showery, and cold; but towards the close of the period a marked improvement was seen. On Sunday gradients for southwesterly winds formed over Ireland, where temperature rose quickly—to $63\cdot6^{\circ}$ in Dublin and 63° at Parsonstown. But this change from winter to summer was of no long continuance, for by Monday morning the first of a series of depressions had reached the north coast, bringing with it squalls, showers, and a fall of temperature. A succession of typical showery April days followed—the worst weather of all being experienced in the South of England on Thursday and Friday owing to the formation in that district of a deep secondary barometrical depression. With a veering of the wind to N. on Saturday, the weather improved, becoming bright and bracing. In Dublin the mean height of the barometer was 29·785 inches. The mean temperature was $49\cdot5^{\circ}$; the mean dry bulb temperature at 9 a.m. and 9 p.m. was $48\cdot4^{\circ}$. Rain fell on five days to the amount of ·383 inch, ·129 inch being measured on Friday and ·118 inch on Wednesday. Hail fell in Dublin on three days, and thunder was heard about midday on Saturday.

The weather of the last four days of the month was favourable, a copious but genial rainfall occurring on the 29th.

The rainfall in Dublin during the four months ending April 30th has amounted to 9·045 inches on 59 days, compared with 8·345 inches on 74 days during the same period in 1889, 8·090 inches on 58 days in 1888, and a 25 years' average of 8·466 inches on 66·2 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall during April, 1890, amounted to 1·483 inches, distributed over 20 days.

β .—NAPHTHOL IN ENTERIC FEVER.

BOUCHARD (*Gazette Hebdomadaire*) in cases of enteric fever recommends ten-grain doses of β -naphthol every few hours. If diarrhœa is severe, three grains of salicylate of bismuth may be added to each dose of the β -naphthol. [α -naphthol and β -naphthol have been said from experiments of M. Charren on dogs to produce cataract. If prescribed at all, their action should be carefully watched.]

PERISCOPE.

DIARRHŒA IN INFANCY.

PROFESSOR L. EMMETT HOLT, M.D., proposes (*New York Medical Journal*, Jan. 18, 1890) the following classification for the diarrhœal diseases of infancy, founded on the *post mortem* examination of a large number of cases; in 70 cases dying of diarrhœal diseases or complications, and in thirty-nine cases selected at random, microscopic examination was made of the intestines:—

<i>Clinical.</i>	<i>Pathological.</i>
I. Simple diarrhœa .	. No lesions.
II. Acute mycotic diarrhœa .	. Acute desquamative catarrh.
1. Acute dyspepsia.	
2. Cholera Infantum.	
III. Acute entero-colitis .	{ 1. Catarrhal.
	{ 2. Croupous.
	{ 3. Follicular ulceration (ulceration of lymph nodules).
IV. Chronic dyspeptic diarrhœa .	{ Hyperplasia of lymph nodules, or no lesions.
V. Chronic entero-colitis .	{ 1. Chronic catarrhal inflammation.
	{ 2. Follicular ulceration.

RENAL CALCULI.

DR. WM. MURRAY (*Prov. Med. Journal*) reports three cases in which the passage of renal calculi was hastened and the pain relieved by the administration of belladonna. He believes that in renal cases the action of belladonna on the ureters is analogous to its action on the intestines in intestinal obstruction.

WHOOPIING-COUGH.

SPIRIT of turpentine dropped on the pillow of a child suffering from whooping-cough, so that the vapour of the turpentine is inhaled by the child whilst sleeping, according to Dr. Vascencellos, cuts short the disease.—*L'Union Médicale*.

A CASE OF SARCOMA OF THE THYROID GLAND.

DR. SOLIS-COHEN records an interesting case, of which the following is a summary:—Pressure on right sympathetic nerve; unilateral tonic spasm of laryngeal muscles; intermittent clonic spasm of opposite side; compression stenosis; tracheotomy. Hæmorrhage from the gland twenty

months later; pressure upon the left sympathetic nerve; the functions of the compressed pneumogastrics aroused by irritation of the trachea. Mechanical irritation of the mucous membrane of the trachea relieved the dyspnoea, reddened the face, and aroused the patient's consciousness. Death from disturbance in the functions of the two pneumogastrics.—*New York Medical Journal*, August 10, 1889.

WARTS

DR. ALTSCHUL (*Centralblatt für klin. Chirurgie*, 1889, No. 18) recommends the application of an ointment containing from 5 per cent. to 10 per cent. of arsenious acid. If the wart has become excoriated the application of a drop of fuming nitric acid on the raw surface does good. [Strong nitric acid is a very painful application to a raw surface, and, if used, we would suggest the addition of a small quantity of cocaine.]

IODO-PHENOL IN WHOOPING-COUGH.

DR. ROTHE (*Revue de Thérapeutique*, Dec. 1st, 1889) warmly recommends the following prescription for children of from 1 to 2 years old who are suffering from whooping-cough:—Phenic acid, 1 gramme; alcohol, 1 gramme; tincture of iodine, 10 drops; tincture of belladonna, 2 grammes; peppermint water, 50 grammes; syrup of white poppies, 10 grammes. Mix. One teaspoonful for a dose.

POISONING BY ATROPIN.

E. R. AXTELL, M.D., reports (*New York Medical Journal*, Feb. 8th, 1890) a case where, by mistaking the strength of a solution, he injected $\frac{3}{4}$ gr. of sulphate of atropin under the skin of a woman who had taken nine 1-grain morphin pills with suicidal intent. The pupils became widely dilated; the patient got restless and delirious, would keep moving about the house and trying to work, would not drink unless forced to, and then only very little; pulse rose to 120; there was constant scratching and clawing of the skin of the body and legs. The restlessness diminished in three hours, and in about seven hours she slept. Next morning the mind was right, but the pupils were dilated for almost a week, and the dryness of throat lasted for several days.

THE HOUR OF DEATH.

J. F. BURNS, M.D., has investigated the truth of the common statement that most deaths take place in the early hours of the morning. He publishes tables of his results in the *New York Medical Journal*, Jan 4th, 1890. From an examination of the times of death reported in 15,000 cases the author finds there were 196 more cases between 6 a.m. and 6 p.m. than between 6 p.m. and 6 a.m. Amongst the deaths at the Charity Hospital, Blackwell's Island, the hourly deaths were highest between 4 and 5 p.m.,

then between 5 and 6 p.m., and thirdly, and almost as high as the latter, between 6 and 7 a.m. In deaths from acute contagious diseases the deaths were highest from 11 to 12 a.m., and next highest between 11 and 12 p.m. The day deaths were always higher than the night deaths, and the afternoon deaths than the early morning deaths.

EGYPT AS A HEALTH-RESORT.

DR. BURDON SAUNDERSON speaks highly (*Practitioner*, Feb., 1890) of a hotel close to the pyramids of Ghizeh; it is built half way up the rocky slope leading to the pyramids, the air is that of the desert, the comforts are those of a first-class hotel, and the requirements of invalids have been specially attended to. Dr. Saunderson says:—"If you want above all *rest* of body and mind, absolute immunity from cold winds and inclement weather, and unlimited sunshine, you will find what you desire in the Valley of the Nile."

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

The Wallich's Improved Inhaler.

MESSRS. BURROUGHS, WELLCOME, AND Co., of Snow Hill Buildings, London, E.C., have placed in our hands one of Wallich's improved inhalers, with a naso-oral cap, suggested by Dr. Macnaughton Jones, for use in cases where it is considered desirable to conduct the inhaled vapour in a continuous current to the mucous membranes of the naso-pharyngeal tract.

"Wallich's Improved Inhaler" consists of an earthenware jug, capable of holding 16 ozs. of hot or cold water. Through an orifice in the handle of this jug air is drawn into it, so as to drive off a continuous current of steam through a sponge fixed in a glass cylinder in connection with a caoutchouc tube and mouth-piece. The medicament intended to be inhaled is dropped upon the sponge in question. When the patient inhales, the steam is drawn through the sponge and becomes impregnated with the medicament. The cost of this excellent and most simple inhaler is only five shillings.

Dr. Macnaughton Jones's naso-oral cap or respirator is charged for separately. It enables the patient to inspire the medicated vapour and then breathe it out again without removing the respirator from the face—small valves on either side of the mouth-piece closing when an inhalation is taken and opening to allow the expired vapour to escape.

All the formulæ included in the *Throat Hospital Pharmacopœia* may be used with the Wallich's inhaler, and so may such inhalants as eucalyptia, pinol, and similar essential oils.

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